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U.S. HOUSE OF REPRESENTATIVES

CONFERENCE ON THE FUTURE OF MEDICARE

Conference Schedule and Preliminary Papers

SPONSORED BY

COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

CONGRESSIONAL BUDGET OFFICE

CONGRESSIONAL RESEARCH SERVICE

NOVEMBER 29 AND 30, 1983

NOVEMBER 29, 1983

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WASHINGTON, D.C. 20515

November 29, 1983

To Participants in the Conference on the Future of Medicare:

The Committee on Ways and Means is very pleased to sponsor this Conference on the Future of Medicare, in conjunction with the Congressional Budget Office and the Congressional Research Service of the Library of Congress.

It is perhaps not yet widely understood that the financial crisis facing the medicare program in the next few years is fully equal to the crisis in the financing of social security cash benefits that was finally addressed on a bipartisan basis, after a period of controversy and indecision, in the Social Security Amendments of 1983. In some respects the medicare problem is more severe. The gap between program outlays and the revenue needed to support the program will continue to grow dramatically in the future. So it is not a short-term problem. Moreover, there is no consensus on strategies for addressing the problem and there is little understanding of the range of options that needs to be considered.

This Conference is intended as a first step in what will be a longer process of outlining and critically evaluating the possible paths toward solution of the medicare financing problem. The Committee is mindful of its dual responsibility on the one hand to preserve and honor this Nation's commitment to assist in meeting the health care needs of the aged and severly disabled, and on the other hand to keep program expenditures within bounds that are acceptable to citizens and taxpayers.

We appreciate the hard work of paper authors, commentators, discussants and congressional staffs in the preparation of what we hope will be a successful and illuminating Conference.

With warm regards, I am

Sincerely yours,

Dan Rostenkowski

Dan Rostenkowski
Chairman

PREFACE

This document contains the preliminary versions of commissioned papers and schedule of a Conference on the Future of Medicare sponsored by the Committee on Ways and Means in conjunction with the Congressional Budget Office (CBO) and the Congressional Research Service (CRS).

The medicare program is facing serious financial problems. The latest estimates from CBO project depletion of the Hospital Insurance Trust Fund by the end of the decade, and rapidly growing cumulative deficits after that. While the Supplementary Medical Insurance Trust Fund does not face the prospect of depletion because of automatic transfers from general revenues, these transfers are large and growing rapidly. Moreover, these transfers increase the size of the Federal deficit. The magnitude of this financing problem appears to be much larger than the cost-saving potential of policy options under active discussion today.

The conference was organized to provide a forum for discussion of major innovative options to deal with medicare's long-term financing problems. The sponsors have commissioned papers by outside experts in this field which are included in this document. Each author outlines one or more long range policy alternatives and discusses their potential for solving the financing problem.

The document also includes introductory papers by Paul Ginsburg and Marilyn Moon of the Congressional Budget Office and Irwin Wolkstein of Health Policy Alternatives, Inc.

The papers in this document are initial drafts and are subject to revision. After the conference is completed, the conference proceedings will be printed. This will include revised versions of the papers printed here, discussion by the lead commentators and the reactor panels and a conference summary by John Iglehart of Health Affairs and The New England Journal of Medicine.

CONTENTS

Page

Conference schedule 1

An Introduction to the Medicare Financing Problem 5
(By Paul B. Ginsburg, Marilyn Moon; Congressional Budget Office)

Medicare's Financial Status—How Did We Get There 16
(By Irwin Wolkstein, Health Policy Alternatives, Inc.)

Restructuring Medicare Benefits 35
(By William Hsiao, Harvard University; and Nancy L. Kelly, Policy Analysis, Inc.)

A Medicare Voucher System: What Can It Offer 53
(By Bernard Friedman, Stephen LaTour, and Edward Hughes, Northwestern University)

Hospital Reimbursement Under Medicare 81
(By Judith Lave, University of Pittsburgh)

Physician Reimbursement Under Medicare: An Overview and a Proposal for Area-Wide Physician Incentives 95
(By Peter Fox, Lewin & Associates)

Using Coverage Policy to Contain Medicare Costs 107
(By David Banta, Pan American Health Organization; and Gloria Ruby and Ann Burns, Office of Technology Assessment)

Reforming Medicare: A New Approach to Financing 121
(By Karen Davis and Diane Rowland, Johns Hopkins University)

Alternative Medicare Financing Sources 135
(By Stephen Long, Syracuse University; and Timothy Smeeding, University of Utah)

SCHEDULE

CONFERENCE ON THE FUTURE OF MEDICARE

NOVEMBER 29-30, 1983

1100 LONGWORTH HOUSE OFFICE BUILDING

NOVEMBER 29, TUESDAY

8:30-9:00 **WELCOME AND INTRODUCTORY REMARKS**

The Honorable James M. Shannon, Member, Subcommittee on Health, Committee on Ways and Means

The Honorable W. Henson Moore, Ranking Minority Member, Subcommittee on Health, Committee on Ways and Means

Paul Rettig, Staff Director, Subcommittee on Health, Committee on Ways and Means, Conference Moderator

9:00-9:15 **AN INTRODUCTION TO THE MEDICARE FINANCING PROBLEM**

Marilyn Moon, Congressional Budget Office

9:15-10:00 **BENEFITS**

Paul Ginzburg, Congressional Budget Office (Moderator)

RESTRUCTURING MEDICARE BENEFITS

Lead Commentator—Eli Ginsberg, Columbia University

Authors Reply—William Hsiao, Harvard University; Nancy Kelley, Policy Analysis, Inc.

10:00-10:30 **BREAK**

10:30-11:10 **A MEDICARE VOUCHERS SYSTEM: WHAT CAN IT OFFER?**

Lead Commentator—Harold Luft, University of California, San Francisco

Authors Reply—Bernard Friedman, Stephen LaTour, and Edward Hughes, Northwestern University

11:10-12:30 **BENEFITS DISCUSSION**

Paul Allen, Michigan Department of Social Services
Karen Ignani, AFL-CIO
Stanley Jones, Health Policy Alternatives
Joseph Newhouse, Rand Corporation
Robert Myers, Temple University
Jennifer O'Sullivan, Congressional Research Service
Robert Patricelli, CIGNA
John Sinn, Eisenhower Medical Center

12:30-2:00 **BREAK**

2:00–3:15 REIMBURSEMENT
Glen Markus, Congressional Research Service (Moderator)

HOSPITAL REIMBURSEMENT UNDER MEDICARE

Lead Commentator—Bruce Vladeck, United Hospital Fund of New York
Author Reply—Judith Lave, University of Pittsburgh

PHYSICIAN REIMBURSEMENT UNDER MEDICARE: AN OVERVIEW AND A PROPOSAL FOR AREA-WIDE PHYSICIAN INCENTIVES

Lead Commentator—Jack Hadley, Urban Institute
Author Reply—Peter Fox, Lewin and Associates
3:15–3:45 BREAK
3:45–5:15 REIMBURSEMENT DISCUSSION
Harald Cohen, Maryland Hospital Review Commission
Jay Constantine, Consultant
Robert Derzon, Lewin and Associates
William Flaherty, Blue Cross/Blue Shield of Florida
Ben Lawton, Marshfield Clinic
Jack Meyer, American Enterprise Institute
Wendell Primus, Committee on Ways and Means
Michael Zimmerman, General Accounting Office

NOVEMBER 30, WEDNESDAY

8:30–9:45 TECHNOLOGY
Judith Miller Jones, National Health Policy Forum (Moderator)

USING COVERAGE POLICY TO CONTAIN MEDICARE COSTS

Lead Commentator—Richard Rettig, Illinois Institute of Technology
Authors Reply—David Banta, Pan American Health Organization; and Gloria Ruby and Ann Burns, Office of Technology Assessment
TECHNOLOGY DISCUSSION
Glenn Markus, Congressional Research Service
John Reiss, Dechert Price and Rhoads
Helen Smits, Yale University
Karl Yordy, Institute of Medicine

9:45–10:00 BREAK

10:00–11:15 FINANCING
John J. Salmon, Chief Counsel, Committee on Ways and Means (Moderator)

REFORMING MEDICARE: A NEW APPROACH TO FINANCING

Lead Commentator—Jack Meyer, American Enterprise Institute
Authors Reply—Karen Davis and Diane Rowland, Johns Hopkins University

ALTERNATIVE MEDICARE FINANCING SOURCES

Lead Commentator—Henry Aaron, Brookings Institution
Authors Reply—Stephen Long, Syracuse University; and Timothy Smeeding, University of Utah

11:15–12:30 FINANCING DISCUSSION
Stuart Altman, Brandeis University
Wilbur Cohen, University of Texas Robert Ball, Center for Welfare Policy
William Fullerton, Health Policy Alternatives, Inc.
Lawrence Lewin, Lewin and Associates
Emil Sunley, Deloitte, Haskins and Sells
Randall Weiss, Joint Committee on Taxation

12:30–1:00 CONFERENCE SUMMARY
John Iglehart, *Health Affairs* and *The New England Journal of Medicine*

AN INTRODUCTION TO THE MEDICARE FINANCING PROBLEM

(*By* Paul B. Ginsburg *and* Marilyn Moon, *Congressional Budget Office*)

Medicare serves elderly and disabled individuals through two separate programs—hospital insurance (HI), which pays for inpatient hospital care, stays in skilled nursing facilities, and home health services, and supplementary medical insurance (SMI), which pays for all other services covered by medicare, principally physician and hospital outpatient services. The programs are financed through separate trust funds, with distinct sources of revenues.

Revenues for HI come almost exclusively from a portion of the social security payroll tax. Employers and employees covered by the program each contribute 1.3 percent of earnings (currently, the first $35,700 of earnings), with the rate scheduled to increase to 1.35 percent in 1985 and 1.45 percent in 1986.[1] Under current law, general revenues cannot be used to make up any shortfall between outlays required to pay benefits and the balance in the trust fund.

In contrast, SMI revenues are obtained from both premiums and general revenues. The premium amount (currently $12.20 per month) increases by law each year, with a contribution from general revenues making up the difference between income and outlays. In fiscal year 1983, general revenues required to meet this requirement totaled about $14 billion, or 77 percent of SMI funding.

The medicare program faces serious financing problems for the foreseeable future. Under current policies, the HI trust fund will be depleted by the end of the decade, while required contributions from general revenues to support physician benefits will continue to grow at a rate that far exceeds the growth in general revenues. The basic problem is that spending on medical care is growing more rapidly than national income, with demographic trends explaining a small part of the difference.

This introductory paper will assess the magnitude of the medicare financing problem and discuss its sources. A broad range of options for dealing with the problem will then be considered. The seven papers that follow will explore the potential of specific options in more detail.

THE PROBLEM

For both parts of medicare, projections over periods as long as 10 or 15 years are very imprecise. Nevertheless, the differences between growth in outlays and growth in revenues is so large that errors in forecasting are relevant only to dates and amounts—not to the conclusion that under current policies, severe financing problems will be faced.

---

[1] The maximum subject to payroll taxes increases each year in accordance with the increase in average earnings. Remaining revenues for the HI trust fund comes from various intergovernmental transfers and interest on trust fund investments.

The financing problem in both trust funds are due to wide gaps between the projected rates of growth of payments to medical care providers and revenues from payroll taxes and premiums. The projected growth in outlays is attributable primarily to rising medical care costs, and to a lesser extent, to the aging of the population. A large part of the increase in costs is attributable to expansion in the volume of services provided. Volume of services as used here refers to both intensity of care—that is, changes over time in treatment practices for specific medical problems—and the number of courses of treatment providied to patients. For example, a more complex range of services are now provided to victims of heart attacks than in the past—including additional tests and monitoring activities—that increase the costs of treatment. Moreover, some procedures, such as hip replacement operations, have increased in frequency as their safety and effectiveness have improved. With medicare committed to financing mainstream medical care for its beneficiaries, changes in medical care practice automatically reflect themselves in medicare outlays.

The HI problem

Depletion of the HI trust fund is projected by the end of the decade (1990 is the most likely year) unless further policy changes are implemented (see table 1). The year end balances are projected to decline each year as annual outlays exceed annual income. Deficits would be small at first, but then inccrease rapidly. By 1995, the annual deficit is projected to be over $60 billion and the cumulative deficit will total more than $250 billion. These projections all assume no further policy changes and hence reflect a "baseline" from which to judge alternative policies.

TABLE 1.—BASELINE PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND OUTLAYS INCOME, AND BALANCES

[By calendar year, in billions of dollars]

	Outlays	Income[1]	Annual surplus (excluding any negative interest)	Yearend balance
1981	30.7	35.7	5.0	18.8
1982	36.1	25.6	−10.6	8.2
1983	40.6	43.8	3.1	11.3
1984	46.5	46.3	−0.2	11.1
1985	51.2	53.4	2.2	13.3
1986	57.3	66.4	9.1	22.4
1987	64.5	66.7	2.2	24.6
1988	72.5	66.8	−5.7	18.9
1989	81.5	70.7	−10.8	8.1
1990	91.7	74.5	−17.2	−9.1
1991	103.1	77.9	−23.8	−34.3

TABLE 1.—BASELINE PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND OUTLAYS INCOME, AND BALANCES—Continued

[By calendar year, in billions of dollars]

	Outlays	income[1]	Annual surplus (excluding any negative interest)	Yearend balance
1992	115.8	81.1	−31.1	−69.0
1993	130.1	83.9	−39.7	−115.1
1994	146.2	86.3	−49.5	−175.1
1995	164.5	87.7	−60.9	−251.8

[1] Income to the trust funds is budget authority. It includes payroll tax receipts, interest on balances, and certain general fund transfers. In years when balances are negative, income includes negative interest, which is the amount that would be paid by the trust fund on hypothetical borrowing required to continue benefit payments. Income in 1982 reflects $12.4 billion in interfund transfers from the HI trust fund to the OASI trust fund. The estimates assume that the interfund transfer will be repaid by 1987.

Source: CBO estimates based on February 1983 assumptions, but updated to reflect the Social Security Amendments of 1983 (Pub. L. 98–21).

Note.—Minus signs denote deficits.

Two items cause an unusual degree of uncertainty in these projections. One is interfund borrowing. The Old-Age and Survivors Insurance Trust Fund (OASI) has borrowed $12.4 billion from HI. The projections here assume no further interfund borrowing and repayment of this loan by 1987. If the loan were not repaid by 1989, depletion of HI would occur in that year instead of 1990.

The second is the extensive discretion given to the Secretary of Health and Human Services (HHS) to set payment rates to hospitals after 1985. At that point, hospital reimbursements are projected to be 9 percent lower than they would have been under the previous cost-reimbursement system.[2] The projections here assume that the Secretary will maintain the 9 percent reduction but not make further cuts.[3] If the Secretary decided to cut reimbursements further—for example, if payments per admission were increased by only 1 percentage point more than the rate of increase of hospital input prices, the projected depletion date would be 1992 (see table 2). The projected deficits would still grow larger each year, even under this further restricted growth in outlays. By 1995, the annual deficit would be about $30 billion, and the cumulative deficit, over $90 billion.[4]

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[2] This is in response to the reimbursement provisions of the Tax Equity and Fiscal Responsibility Act of 1982 and the budget neutrality language in the Social Security Amendments of 1983.

[3] This level of stringency implies a rate of growth of approximately 3.5 percentage points more than the rate of increase of hospital input prices.

[4] The longer the projection period, the more important is the assumption concerning the rates set by the HHS Secretary. The more stringent assumption described in the text, implies a 27 percent reduction from the cost reimbursement baseline in 1995. Many would dispute the categorization of such a reduction as a continuation of current policies.

TABLE 2. PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND OUTLAYS, INCOME, AND BALANCES UNDER ASSUMPTION OF MORE STRINGENT DRG RATES AFTER 1985 [1]

	Outlays	Income [2]	Annual surplus (excluding any negative interest)	Year-end balance
1986	57.3	66.4	9.1	22.4
1987	62.1	66.9	4.8	27.2
1988	68.3	67.1	−1.2	26.0
1989	75.1	71.5	−3.6	22.4
1990	82.6	75.9	−6.8	15.7
1991	90.9	80.1	−10.7	4.9
1992	99.9	84.6	−15.2	−10.4
1993	109.8	89.1	−19.4	−31.2
1994	120.8	93.6	−24.1	−58.4
1995	133.0	98.0	−29.5	−93.4

[1] Assumes DRG rates are increased one percentage point per year faster than the increase in the hospital market basket.

[2] Income to the trust funds is budget authority. It includes payroll tax receipts, interest on balances, and certain general fund transfers. In years when balances are negative, income includes negative interest, which is the amount that would be paid by the trust fund on hypothetical borrowing required to continue benefit payments. Income in 1982 reflects $12.4 billion in interfund transfers from the HI trust fund to the OASI trust fund. The estimates assume that the interfund transfer will be repaid by 1987.

Source: CBO estimates based on February 1983 assumptions, but updated to reflect the Social Security, Amendments of 1983 (Public Law 98–21).

Note.—Minus signs denote deficits.

Projections for the subperiod beginning in 1985, at which point most of the recent legislative changes will have been implemented, indicate in more detail the nature of the problem. Over the 1985–95 period, outlays are projected to grow at a 12.4 percent annual rate, while revenues are projected to increase at a 7.9 percent rate.[5]

This 12.4 percent annual growth in medicare outlays reflects the influences of general inflation, growth in the eligible population and its aging, and changes in the nature of hospital care. General inflation accounts for a significant portion of the increase in hospital costs, but does not itself contribute to the financing problem since it is also reflected in growth in revenues. Over the 1985–95 period, the GNP deflator is projected to increase at a 3.8 percent annual rate. The "market basket," which is an index of prices paid by hospitals for labor, supplies, and capital goods, is projected to increase somewhat faster, at an annual rate of 5.7 percent.[6]

Demographic trends are projected to account for 2.2 percentage points of growth in HI outlays. Of this, 1.9 percentage points captures growth in the number of enrollees, while 0.25 percentage points reflects outlay implications of the expected aging of that population. While HI claims increase with age, the aging of the medicare population is not rapid enough to be a major contributor to outlay growth during this period.

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[5] If not for the increase in the tax rate scheduled for 1986, the revenue growth over the period would be 7.1 percent per year.

[6] A difference between price increases for inputs and general inflation is not unique to hospitals. Since wage rates tend to increase in real terms, most firms face more rapidly rising prices for inputs than for their output. Generally, the difference is resolved by productivity gains.

The remaining cause of growth outlays—changes in the nature of medical care that affect the elderly—is the most difficult to project, partly because it is influenced by the nature of the reimbursement system. Extrapolating from medicare's experience under cost reimbursement, and removing the effects of the aging of the medicare population that were discussed above, real outlays per enrollee are projected to grow at slightly more than 4 percent per year after 1985.

The projection of the revenue growth rate for covered earnings reflects a forecast of the near term performance of the economy and assumptions of moderate growth thereafter. Though the estimates for 1983 and 1984 were developed using the most recent CBO economic forecast, which reflects the current cyclical upswing, those for later years assume moderate noncyclical growth with gradually declining inflation. Whether the projected growth path is attainable with tax and spending policies now in place is uncertain, however. If the economy's performance is worse than projected, HI balances would decline more quickly.

The SMI problem

Problems raised by the rapid growth expected in SMI are closely related to concern over the size of the Federal budget. Since, by law, appropriations from general revenues to SMI must be sufficient to guarantee solvency of the trust fund, SMI does not face a financing crisis per se. Rather, concern arises over this part of medicare because the projected growth of SMI is so much higher than the growth of general revenues—that is, Federal tax revenues not earmarked for specific purposes—from which it draws support.[7]

Like HI, outlays under SMI are projected to increase rapidly, by almost 16 percent per year through 1988. To finance this increase, general revenue contributions will have to rise even faster—averaging about 17 percent per year.[8] Consequently, the share of general revenues necessary to finance the SMI trust fund will rise from 3.1 to 5.7 percent between 1982 and 1988. If the share of general revenues contributed to the SMI trust fund were not allowed to rise, outlays would have to be reduced or premiums increased by almost $27 billion over the 1984-88 period, an amount representing about 19 percent of all SMI expenditures for the period.

Projections of SMI growth beyond 1988 are difficult, but two possible scenarios are outlined to indicate the demands that SMI could place on Federal revenues. If the growth of both revenues and SMI outlays were to continue at the same annual rates now projected through 1988, SMI would require a transfer of about 12 percent of general revenues not earmarked for other use in 1995. Alternatively, even if the growth of SMI outlays decelerated to an annual rate of less than 12 percent and general revenues rose by 8 percent annually, the share of such revenues necessary to fund SMI would still rise to over 7 percent in 1995.

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[7] General revenues primarily include personal and corporate income taxes and exclude payroll taxes such as those used to support social security and unemployment insurance.

[8] The difference occurs because SMI premiums are scheduled to grow at a slower rate after 1985 when, under current law, their growth will again be limited by the rate of growth in the social security cost-of-living increase.

Projections of the expected growth in SMI expenditures are based on past experience that indicates growth is a product of an increase in the number of persons covered by medicare, higher prices for services rendered, and rising use of services per beneficiary—both in their number and in their composition. For example, between 1978 and 1982, total SMI benefits grew at an average annual rate of 21 percent. About one-tenth of this growth was attributable to expansion in the enrolled population, with the remainder a combination of increases in prices and in the use of services.

Although it is difficult to separate the price and volume factors, changes in the latter are particularly important in SMI, accounting for almost half of total per capita growth in outlays. For example, total per capita physicians' services—which constitute over 72 percent of SMI benefits—grew at an annual rate of 18 percent.[9] Over the period, the physician services component of the Consumer Price Index grew at an average annual rate of just over 10 percent. This figure is likely to be an overstatement of increases in prices paid by medicare, however, with the rate more likely to have been about 9 percent on average.[10] The residual—representing just over an 8-percent annual growth rate—could be attributed to increases in the number of services and to a changing mix of services which includes faster growth in services provided by specialists.[11]

OPTIONS FOR SOLVING THE PROBLEM

Given the magnitude of the problems facing medicare in the next decade, incremental approaches are unlikely to provide solutions. Moreover, simultaneous pursuit of incremental options might create inconsistencies and conflicts that would ultimately limit any reduction in medicare outlays. Consequently, the papers for this conference attempt to examine broad options for reducing costs or providing additional financing.

This introductory paper will not describe options in detail or evaluate them, but rather will provide an overview of the range of general approaches, an indication of how they are supposed to work, and a discussion of their potential interrelationships. Since a likely strategy would be to combine several options rather than focusing on just one, it is important to consider which approaches are complementary and how they might be structured to be most effective.

As described above, the problems facing medicare are essentially twofold: The volume of services per beneficiary is rising and the unit costs of those services to the Federal Government are increasing rapidly. Unless options for change address these underlying problems, medicare is likely to continue to face financial pressures.

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[9] Outpatient and other services under SMI grew at an even faster per capita annual rate of 22 percent over the period, but since price and volume cannot be easily disaggregated for such services they will not be discussed further.

[10] Some share of the physician component of the CPI also is likely to reflect changes in the nature of physician services over time, reflecting intensity as well as pure price increases. In addition, medicare uses an economic index which is intended to restrict the growth of the prevailing charge to the same rate as increases in operating expenses of physicians and in general earnings levels.

[11] Between 1975 and 1980, reimbursements to general practitioners grew at less than half the rate for all physicians, while the growth rate for physicians specializing in cardiovascular disease, ophthamology, radiology, and pathology was higher than for physicians as a whole.

Possible options for attacking medicare's financial problems can generally be classified into three broad categories:

Pay for fewer services;
Pay less for each service; and
Shift responsibility to beneficiaries or taxpayers.

Pay for fewer services

One of the criticisms often leveled at medicare has been its limited control over what medical care services are delivered. Payment schemes that reimburse on a fee-for-service basis provide few incentives to providers or beneficiaries either to limit the number of medical services or to use a lower cost mix of services.

Some control over volume exists through medicare cost sharing, and more recently, through the introduction of a hospital prospective payment system based on diagnostic related groups (DRG's). Medicare does assess some cost-sharing on beneficiaries—particularly through SMI—which may cause them to limit use of services. The new DRG hospital payment system also gives hospitals the incentive to be more efficient in the treatment of each case, and might result in limiting the number of services associated with each hospital stay. On the other hand, it might also encourage additional admissions, and it does not improve incentives to provide only the most efficacious forms of care. For example, the DRG system provides no economic incentive to discourage choice of a more expensive surgical course of treatment rather than other procedures that which would be covered by a different DRG. Thus, even this major change in hospital reimbursement does not fully address the problem of volume of services.

Reducing the volume of services would require careful consideration of the efficacy and value of individual medical procedures. While some services might be readily discarded under closer scrutiny, significant reductions in volume would probably require forgoing some services that are efficacious, but whose medical benefits are judged to be small in comparison with their cost.[12]

Reductions in volume could be accomplished through incentives for providers or patients, or by direct controls by medicare or its designated agents.

The essence of an approach emphasizing incentives for providers would involve changing the unit of service that is reimbursed. An example is the DRG hospital payment system, which encourages economizing on the use of services within the hospital by basing payment on the diagnosis. A parallel approach for physician services is under study by the administration at the direction of the Congress.

Broadening further the unit of payment to encompass all medical services required by a patient over a year has substantial potential to reduce volume. Under such a system, providers would economize on the number of hospital admissions as well as on the services ordered during each admission and on outpatient services. The health maintenance organization (HMO) is the best known provider organization that contracts to provide medical care on a per-person basis, and it has demonstrated substantial reductions in volume compared with fee-for-service medicine. The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) authorizes medicare to pay HMO's on a per-enrollee basis. A medicare voucher system has the potential of expanding the use of capitation to control volume by giving beneficiaries access to other organizations willing to provide care under capitation payment. Stimulating the development of alternative delivery systems that serve nonmedicare patients would, in turn, make medicare voucher options more attractive.

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[12] William B. Schwartz, "The Competitive Strategy: Will It Affect Quality of Care," in Jack Meyer, editor, Market Reforms in Health Care (American Enterprise Institute, 1983, pp. 15–21.

In contrast to incentives for providers, cost-sharing would reduce the volume of services by emphasizing incentives to the patient. Although little research exists on the effects of cost-sharing on medicare beneficiaries, work available on the under-65 population indicates that use of services falls as cost-sharing rises. The effect is especially pronounced for outpatient physician services. Since extensive private supplemental coverage is in place, however, increased cost sharing would largely shift costs to beneficiaries and others paying the premiums for supplemental coverage, rather than reduce the volume of services.

Direct controls on providers by medicare or its agents offers another alternative to reduce the volume of services. One example is utilization reviews by professional review organizations (PRO), which attempt to reduce volume by identifying uses of services that depart from the norms of medical practice. Another is limiting payment for difficult procedures to designated centers, where quality might be higher, and prescribing of procedures might be more prudent. A third direct control option would end medicare coverage of very expensive procedures with questionable or small medical value.

Pay less for each service

Athough reducing reimbursements for each unit of service provided can produce considerable short-run Federal savings, such approaches do not directly address the underlying problems leading to higher medicare costs. Indeed, lower reimbursements might aggregate problems with volume of services, thereby offsetting some Federal savings. Cuts in physician reimbursement appear to have increased billings [13] and some have speculated that reducing hospital DRG rates too much could result in more "gaming" than would otherwise be the case.

Restricted access to mainstream services for medicare beneficiaries is another concern if the level of reimbursements is severely restricted. When providers are required to accept medicare reimbursements as payment in full, as in hospital care, some providers may find the rates too low to continue to serve the medicare population, or providers continuing to serve medicare beneficiaries might be forced to offer a very different style of care. When assignment is voluntary, as in physician services—that is, when providers may seek amounts above medicare's rates from beneficiaries—part of the reduction in Federal reimbursements would be passed on to beneficiaries, or in refusal to treat those patients who could not afford additional cost sharing.

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[13] Thomas Rice and Nelda McCall, "Changes in Medicare Reimbursement in Colorado: Impact on Physicians' Economic Behavior," Health Care Financing Review, vol. 3 (June 1982), pp. 67-75.

Coordinating reductions in reimbursements with other payers could alleviate some of these problems, however. Providers would be more prone to increase efficiency and reduce the growth in input prices (especially wages) when opportunities for cost shifting are removed. Indeed, providers' greater strides at cost reduction might open possibilities for additional reimbursement reduction in the future. On the other hand, "all-payer options" tend to be more administratively cumbersome and restrict some of the potential for increased use of competition to control volume.

Shift responsibility to beneficiaries or taxpayers

Unless medical care costs can be readily brought into line by changes in reimbursement practices, it is likely that additional costs must be borne by beneficiaries, taxpayers, or both. Medicare beneficiaries could pay a greater share through across-the-board increases in premiums, premium increases restricted to higher income beneficiaries, or greater sharing of costs by the users of such care. Revenues for medicare could be increased from the payroll and general tax sources that now are used to finance the system or by moving to a different revenue scheme.

Beneficiary cost-sharing.—The tradeoffs among the major options for shifting costs to beneficiaries are relatively straightforward: across-the-board increases would spread the burden among the greatest number of individuals while tying cost-sharing to use of services would have a somewhat greater impact on beneficiaries' incentives for use of care. The same reductions in outlays could be obtained from either approach.

Using higher premiums for SMI or introducing an HI premium would be similar to tax increases—raising revenues to fund medicare outlays, without necessarily changing the structure or nature of the program—although the burden would fall on a different group of persons. If equal premium increases were deemed too harsh for low- or moderate-income elderly and disabled individuals, they could be differentiated according to income.

Cost-sharing tied to the use of services would both shift costs onto beneficiaries and affect the use of services by some—thereby reducing the volume of services. The existence of private supplemental insurance for medicare means, however, that some beneficiaries are able to insulate themselves from the incentive effects of any additional cost-sharing. These individuals would still pay a higher share of total costs—through higher insurance premiums—but would not be encouraged to use fewer services. Moreover, if some protection against catastrophic expenses is desirable for beneficiaries, there are a number of practical constraints on the implementation of additional costs-sharing, especially since SMI already has a high degree.

Medicare vouchers might be viewed as an alternative to major increases in cost-sharing. Vouchers could—like cost-sharing—shift the burden onto beneficiaries, but also expand the range of choices available to beneficiaries. That is, the beneficiaries would be allowed to choose among a variety of benefit packages offering different combinations of cost-sharing and coverage for different premiums.

Revenue increases.—The deficit could also be reduced through increased revenues. Increased revenues could be obtained by raising the payroll tax rate, levying a new tax and dedicating the revenues to the trust fund, or transferring general revenues to the trust fund. A number of considerations would be relevant to this choice. One is who should pay the additional taxes. Should it be the working population, the beneficiary population, or the broader population of all consumers? Another issue is the importance of maintaining the trust fund approach. Some have lauded the trust fund approach for its ability to focus attention on serious problems, although the fund could be brought into balance with spending remaining at an inordinately high level. Finally, the overall budget outlook is relevant. With such large deficits projected for the foreseeable future, approaches depending heavily on transfers of general revenues would probably have to consider what taxes should be increased to provide the general revenues to transfer to medicare.

Interactions among approaches

As has already been suggested, some of the options for changing medicare would resolve the financing problem through at least two of the three broad mechanisms. Cost-sharing, for example, would both affect use of services and shift costs onto beneficiaries. Moreover, some of the specific approaches might be combined to reduce disadvantages that would occur if only one were adopted.

In general, if two options seek to change the same behavior, they would not achieve combined savings equal to the sum of savings from each alone. For example, hospital coinsurance directed at shortening lengthy stays probably would not generate savings as great as before the introduction of the DRG system, which is itself likely to discourage such behavior. On the other hand, since the DRG system may encourage additional stays in hospitals, new cost-sharing might be implemented through higher or multiple deductible amounts to reduce incentives for hospital admissions. In this second case, the two options would serve as complements rather than substitutes.

Another area where careful coordination is needed in designating ways to cut reimbursements to providers, while improving incentives for limiting use of care. For example, paying physicians less for each service performed would create incentives for increasing the volume of services provided. Consequently, simple reimbursement restrictions might need to be combined with constraints on use.

Since it might be necessary to employ a number of changes to achieve a sufficient reduction in costs and/or increase in revenues, another goal of coordinating options might be to ensure that the burden of various changes is spread across many individuals, rather than being concentrated only on one group such as providers or beneficiaries. For example, if cost-sharing were to be increased, any increase in tax revenues might be restricted to payroll taxes so as not to affect beneficiaries further. On the other hand, current beneficiaries, who paid in little in taxes for HI, will draw out large amounts of benefits and it might be reasonable to ask greater sacrifices from this beneficiary group.

CONCLUSION

The medicare financing problem is a manifestation of a broader societal problem—the vastly different growth rates between health care spending and incomes available to pay for it. While there is an HI "crisis" because outlays in this program are currently supported only by payroll taxes, the projected high growth rates in medicare outlays suggest that it would be of concern even if other means of financing were used. Changing technology continually yields opportunities for additional medical services that have prospects of improving medical outcomes. Many are very costly, however, and current financing arrangements give only limited encouragement for weighing benefits of services against their costs. Changes in financing that would bring incentives to bear on decisions concerning the use of services are likely to be an important part of solving the medicare financing problem in particular and society's problem in general.

MEDICARE'S FINANCIAL STATUS—HOW DID WE GET THERE?

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Last April, Alice Rivlin, then Director of the Congressional Budget Office, summarized the financial status of the medicare program. (Rivlin, 1983.) She pointed out that "the projected growth in outlays threatens the solvency of the Hospital Insurance (HI) Trust Fund." She also pointed out that "there were equally serious problems in the other part of medicare—supplementary medical insurance (SMI) * * *." She said, further, that "although SMI does not face insolvency in its trust fund, because transfers from general revenues are required by law, its increased outlays * * * are adding significantly to the Federal deficit."

These statements describe, in a nutshell, where medicare financing stands. This paper will start with a brief description of medicare's history and then discuss the circumstances which resulted in our present financial difficulties with the program. The paper will do so from three approaches. First, it will examine the cost estimating process and its relationship to the problem. Second, the paper will review some of the steps taken to respond to the problem. Finally, the paper will consider the implications of the current policies underlying medicare benefits and their financing.

To the degree possible and feasible, this paper relies for evidence upon written records of medicare history. In some cases, it was necessary to call upon the memory of the author who was a participant and close observer of the actions, but his memory was checked against the recollections of some of the other participants and observers of the action on medicare over the 18 years of its life.

AN OUTLINE OF MEDICARE HISTORY

The beginning

Medicare was enacted during the closing days of an era when Federal policy was aimed at making the benefits of health care more widely available. This policy was implemented not only by easing access to services through medicare and medicaid's financing of patient services, but also by financing the creation of physical resources and the training of health manpower. The era was a time when more was clearly considered better, and some of its actions induced both additional services and additional costs that are continuing to this time and beyond.

The time of medicare's enactment was also a period of optimism in thinking about the future of the Nation's economy. Continuing high rates of economic growth were generally expected, and the wealth of the country was believed to be sufficient to permit a share to be made available to protect the aged from insecurity arising from the costs of health services. Medicare's primary goal was to prevent major illness from spelling financial disaster for the older people of the country. The point has been made that the aged cannot be protected from dependency without health insurance that responds to the costs of illness as they occur, and only a social insurance program seemed capable of meeting the need. (Wolkstein, 1970.)

The era of 1965–71

The policy during the period 1965–71 was primarily aimed at medicare's initial goal. One of the most important of its initial policies was to require the desegregation of participating facilities, providing equal access regardless of race. Another of the initial policies was to maintain peaceful, cooperative relations between the program and providers of health services. As a consequence, there was an initial willingness by medicare to meet providers at least halfway to assure the adequacy of medicare payments. Medicare provided an array of policies aimed in this direction, including payment of 2 percent more than accounted-for costs, payment of accelerated depreciation, and very prompt payment of services. Furthermore, physicians' charges were considered reasonable at virtually whatever level they charged to medicare.

Despite the liberal medicare payment policy, hospitals have claimed, both when medicare started and ever since, that they were not being reimbursed full cost, meaning, at least sometimes, full charge payment or advance payment of part of capital costs and a contribution toward charity care. Medicare has always paid the losses on unpaid medicare copayments, and medicaid relieved hospitals of much of their bad debt problem preexisting the enactment of the two programs, but hospitals have considered these contributions to be insufficient because they found it necessary to charge other payers more.

While very shortly after the medicare program went into effect the hospital insurance program was found to be underfinanced, the reaction during that period was not to tighten up on cost control, but rather to enact, in 1967, an increase in the contribution rates and the earnings base to which the contribution rate is applied, and to increase the earnings base again in 1971.

This is not to say that the high rate of increase in health costs in general and medicare costs in particular went unnoticed. As early as 1967, a National Conference on Medical Costs was convened to consider this problem. However, the conference conclusions were, perhaps, conspicuous by their failure to suggest restraint on the rates of medicare payment as a possibility for action. (U.S. Department of Health, Education, and Welfare, 1967.) Rather, the point was made over and over that what was required was a better organized health care system—a suggestion that is more easily made than implemented.

Some of the specific cost-related problems that might be solved by medicare policy or legislative modifications were analyzed in a Senate Finance Committee report in 1970. (Staff to the Committee on Finance, U.S. Senate, 1970.) This report included recommendations for some of the steps that were later taken either through regulation or other administrative action—dealing with accelerated depreciation and teaching physician reimbursement, for example—or legislation that was enacted in 1972.

A brief but interesting interlude in medicare history occurred under the Nixon economic stabilization program when increases in payments for hospital and physicians' services were restrained. However, when the general price control program ended in 1974, the controls on medicare payments also stopped.

The era of 1972–81

While the 1972 medicare legislation may mark the end of the era during which primary importance was placed on satisfying providers, the major step taken in 1972 consisted of the enactment of the extension of medicare coverage to the disabled and to persons suffering from end-stage renal disease, with a consequent large increase in medicare costs, and a provision that limited annual increases in the SMI premium to no more than the general increase in cash benefits, a change that has resulted in a large increase in the general revenue contribution to the program. While coverage of prescription drugs under medicare was quite widely supported before 1972 and since, this provision has never won sufficient support for adoption nor has any other major addition to benefits. The cost of the existing program undoubtedly increased congressional and administration reluctance to expand benefits.

The 1972 legislation marks the end of an era because of the many provisions that were adopted which were aimed, at least in part, at cost issues. These include:

1. Authorization to establish limits on costs recognized as reasonable;
2. Index limits on increases in prevailing charges for physician and other medical services;
3. Limitation on Federal participation in capital expenditures made contrary to State plans;
4. Restrictions on payment for the services of physicians in teaching settings;
5. Increase in the supplementary insurance deductible from $50 to $60;
6. PSRO provisions;
7. HMO enrollment option; and
8. Limit on institutional payments, generally, to the lesser of cost or charges.

However, in retrospect at least, we can conclude that these steps, while making medicare a greater force in directing the health care systems, were ineffectual as cost controllers.

The 1982–83 period

During the period 1972–81, there was a gradual, but not very stringent, administrative tightening of medicare rules that tended to hold down costs somewhat. However, estimates of the cost of the program showed continuing increases in the insufficiency of income to pay hospital insurance costs and large increases in general revenue support for SMI. Much more rigorous control of all hospital costs were sought by the Carter administration as part of the cost control bill it supported, but which Congress did not agree to. However, a new mood to act on medicare costs emerged in the course of the Reagan administration's efforts to reduce budget expenditures for non-Defense programs. The acceptance of medicare and medicaid cutbacks seems part of a new recognition of the limited capacity of the Nation to support desirable programs and a willingness to use strong cost-control measures. From this recognition came the legislation of 1982 and, finally, 1983, when a prospective rate system was adopted for payment for medicare's hospital services. However, the program remains in the difficulty described by Alice Rivlin. Currently under consideration are further restrictions on physician payments, increases in the beneficiary share of SMI premiums, and increases in the SMI deductible. Passage of these proposals remains uncertain and, in any event, would do nothing to improve the hospital insurance financing.

A later section of this paper will discuss further some of the actions taken to deal with the medicare cost problem.

COST ESTIMATING FOR MEDICARE

Predicting the problem

The dire statements currently being made about the financial status of the medicare program might leave one with the impression that current forecasts that the Federal Hospital Insurance Trust Fund (FHITF) will be depleted in 1990 or 1991 (Board of Trustees, FHITF) under intermediate average cost estimates, or even 1988 under pessimistic assumptions, are something or a surprise. (These depletion forecasts, and all other statements made in this paper about hospital insurance financing, refer to intermediate costs, or costs estimated using intermediate assumptions.) While long-range projections of health costs and of balances in medicare's hospital insurance trust fund are difficult to make with precision, the fact is that all reports of the board of trustees of the fund since 1976 have reached similar conclusions to those being made today. The 1975 report concluded that the fund would be exhausted at the end of the period (1975–99) then being estimated (Board of Trustees, FHITF) and the subsequent annual reports all predicted exhaustion by about 1990. (Board of Trustees, FHITF.) In other words, today's financial problem cannot be attributed to failure by the actuaries to provide notice. Even the current heightened awareness of the problem does not assure quick action to solve it. It will be recalled that the timing of action with respect to similar problems with old-age and survivors insurance financing was delayed until that fund was on the brink of inability to pay benefits (Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, 1982); and the 1972 crisis in hospital insurance financing was not resolved until the last possible moment.

Forecasting and contribution rates

While, in effect, the inadequacy of hospital insurance funding sources (almost all from payroll taxes) to finance benefits after the end of this decade has been forecast since 1976, it may be of some interest to examine the record in more detail (see table 1). It demonstrates a continuing string of increases in estimates of long-range costs and continuing indications of need to shore up in greater and greater amounts the financing of the program. The cost estimates for medicare were controversial even before the enactment of the program and questions about the adequacy of financing were part of the argument against medicare's enactment. (Myers, 1970.) Even though the difference in the estimated cost of the program, as between the administration's actuaries and those of the insurance industry, had narrowed a great deal as enactment neared, and, even through the Congress adopted more conservative cost assumptions than those originally recommended by the administration, the insurance industry still estimated that costs would be about 26 percent higher than the 1.23 percent of payroll cost then being estimated by the administration acturaries.

By 1967, the Board of Trustees estimated, based on the first record of experience under the program, that costs were some 0.28 percent of payroll higher than the official estimates in 1965; and, it was estimated that the trust fund would be depleted in 1971 if remedial action was not taken. To remedy the financial imbalance, in 1967 the combined employer-employee contribution rate for each year, beginning in 1968, was increased by 0.2 percent of payroll; and, the annual earnings base to which the taxes were applied was increased from $6,600 to $7,800. According to the estimates of that time, the action put the system back into balance. By 1970, the level cost was being estimated one-third higher than in 1967, even after assuming that the earnings base would be kept up-to-date in the future with rises in earnings (automatic indexing was not part of the original law). In 1972, the level cost was estimated higher by one-fifth than in 1970; and, it was forecast that the trust fund would be exhausted in 1973 without an improvement in financing provisions.

The 1972 response to impending bankruptcy was to provide for a very substantial increase in the contribution rate, not only to increase the maximum annual earnings to which the rate applied, but to make future increase in the maximum automatic, in line with an index of earnings. (Board of Trustees, FHITF.) The adoption of automatic adjustments in the earnings base was not enacted specifically with hospital insurance in mind, but was part of the plan that was designed to provide for automatic adjustments in cash benefit levels. The automatic system was intended to avoid the need for frequent legislative action, as had occurred regularly since 1950, to keep the social security system up to date.

However, the difficulties with forecasting medicare costs and the need to increase the contribution rate did not discourage the legislators from expanding the program in 1972. Possibly, they assumed that, by then, there was sufficient experience that in the future cost estimates would be more reliable. The legislation adopted in 1972 provided the only major expansion in medicare that was adopted during its history to date. In 1972, coverage of the disabled and of persons with end-stage renal disease was added to the program. As a consequence, level costs under the expanded program were estimated at 0.4 percent of payroll higher than the 1972 estimates for the original program. Furthermore, the new coverages expanded areas where there was little actuarial experience and raised the likelihood of serious errors of estimate. In the 1972 legislation, the average contribution rate was increased by 1.03 to 2.63

percent of payroll, with the excess of the estimated increase in revenues over the increase in expenditures flowing from the coverage liberalizations forecasted to result in close actuarial balance.

By 1975, however, the estimated average cost had increased to 2.85 percent of payroll, a smaller increase than had occurred in the 1965–72 period, but trouble with financing was once again being forecast. Despite increased estimates of cost since 1972, the contribution rates have not been increased generally since 1972. In fact, in 1973 and 1977, the rates were decreased slightly for the period 1974–84 (see table 2). It has proved easier to propose increases some years in the future than to collect them immediately. When the contribution rate was reduced, the rate decrease was estimated to be offset by an increase in the earnings base that was enacted at that time. The rate reduction was made even though the result was to leave the trust fund with an estimated negative balance of 1.12 percent of payroll on an average cost basis. No changes, up or down, were made in the general contribution rate schedule since 1977, athough, this year the rate for the self-employed was raised to make it equal to the combined employee-employer rate applied to wages. This and other steps that were taken in 1982 and 1983 reduced both the hospital insurance deficit and the general fund obligation for SMI. These moves, made some years before disaster was expected to strike medicare, were made more with an eye to the Federal budget than to medicare's financial status.

The steps taken in 1982 and 1983 account for a drop in the estimated average cost of the hospital insurance program of 0.5–0.7 percent of payroll and a comparable drop in the deficit in financing the program. However, the deficit is still estimated at between 1.10 and 1.24 percent of payroll on an average cost basis. The deficit is still that large despite an estimated 1.32 percent of payroll which was, in effect, added to the balance principally by cost reductions provided under the 1982–83 legislation. In effect, the long-range percent of payroll cost estimates doubled from 1972 to 1983. Moreover, increases in the estimates of the average cost of the program as a percent of payroll just since 1980 more than offset the entire reduction in outlays in hospital insurance by actions taken under the 1982 and 1983 legislation. A substantial rise in the estimate of average cost occurred in the course of making estimates for 1981–83 after remaining essentially constant during the period 1977–80, so that the data suggest that seriously difficulties with making long-range forecasts continue, although underestimating was at a lesser rate in the 1972–83 period than in the 1965–72 period.

While there have been large changes in the 25-year estimates, forecasts of the duration of time during which there would be a positive balance in the fund (until about 1990) have been reasonably consistent for the last 7 years. The difference in precision of forecasting results seem to show how much more difficult it has been found to provide consistent forecasts of medicare costs 25 years into the future as compared with making 10-year forecasts.

The assumptions and rules for estimating

Politicians' slowness to act to correct the trust fund imbalance since the early 1970's probably reflects their political commitment to the elderly and need to postpone, as long as possible, any bad news for this constituency. However, it may also reflect distrust of unfavorable actuarial projections and hope they will prove wrong. In fact, long-term projections have been difficult, and remain so today, but for different reasons than most people assume.

The problem in projection is not as strongly associated with fluctuations in inflation rates or utilization rates as some believe. This is because medicare includes automatic adjustments of both the taxable earnings base and total revenues, used to support the program affecting general inflation, and adjustment of the beneficiary's share of program costs (copayments) that reflect inflation of hospital costs.

A serious problem in the projection is that health care costs and prices have been rising more rapidly than the taxable earnings base, especially in the last several years of recession, when high inflation has combined with the low increases in wages and high unemployment associated with a flat economy. This has created an urgent trust fund problem. How urgent comes down to how long and how fast health care costs can continue to rise and how long and how flat the rest of the economy will be.

The factors that account for rapid increases in health care costs can be identified. The ultimate question is, How much of the GNP will we want to spend for increased services, not only for Federal programs, but for the whole population? The tax rate must reflect this judgment, and it is not a judgment that the most skilled use of actuarial procedures can predict with any certainty. In fact, because of their doubts about the ability to make accurate longer range forecasts, the 1971 Advisory Council on Social Security, appointed according to provisions of the Social Security Act, recommended that the valuation period for estimating the hospital insurance program costs be reduced to 10 years. (Board of Trustees, FHITF.) This view allows politicians to justify delay by hoping the numbers will prove wrong.

While extending the range of forecasting introduces difficulties into the process, shorter, fixed-period forecasts have their own problem. For one thing, the estimated adequacy of financing becomes an important function of the particular period considered; and, as the period shifts, the relationship of income to outgo changes so that the estimate of adequacy changes. As long as the relationship between income and outgo is less favorable at the end of the estimating period than at the beginning, we must understand that as estimates for later periods are made, they will inevitably indicate higher costs as a percent of payroll and the difference may be substantial over a period of years. This is not a fault of the actuary and his projections, but of the legislative ground rules for the forecasts.

As was previously discussed to a considerable degree, the forecasting process is made less difficult because inflation that results in expenditure increases also tends to produce higher earnings in the general economy. However, unduly favorable assumptions about rises in earnings and resultant revenues for medicare will produce misleadingly optimistic predictions, as the medicare actuaries had the courage to point out some years ago (King, 1980). One of the potential problems with the economic assumptions is that, for political reasons, every administration tends to view optimistically the prospects for future economic growth (high) and inflation (low), no matter how dismal the past records may have been. We would expect at least some tendency to reflect administration views in HCFA's actuarial projections.

Another automatic adjustment in the system that eases the long-range prediction problem is provided by the so-called "dynamic deductible" in hospital insurance. The deductible and coinsurance levels in hospital insurance are automatically increased as hospital costs per day increase. This factor, too, eases somewhat not only the estimating but the financial problem because it shifts some of the rising hospital costs to the beneficiaries to pay out-of-pocket or through supplementary coverages. An idea for reducing the risk of inadequate medicare financing that was considered and was included in an amendment sponsored by then-Senator Ribicoff in 1974, would have applied a variable deductible to each day of hospitalization, with the deductible set to keep covered hospital costs constant relative to the earning base. This idea, if accepted, would have essentially eliminated the issue of the adequacy of hospital insurance financing. However, it did not gain wide support because of the burden it would have put on beneficiaries, and because some, including Ways and Means Committee Chairman Wilbur Mills, as the author recalls, opined that such a shift of burden, even if legislated, would only be theoretical since it was unlikely that Congress would permit it to happen.

Despite the automatic adjustments that were adopted, forecasting medicare's hospital insurance financial status has been a difficult task. The bottom line to the forescast is the ratio of expenditures (benefits, administrative costs, and funds required to maintain an adequate fund balance) to income (contributions plus interest on the balance in the fund). Actual dollar levels come into the picture because they affect the value of the trust fund and its interest yield in relationship to expenditures.

As was previously mentioned, even the annual shifting of the 25-year period over which the costs are estimated importantly affects the estimated balance. The 1-year shift between 1982 and 1983 adversely affected the estimated balance by 0.18 percent of payroll. (Office of Financial and Actuarial Analysis, HCFA.) Compounding a difference of 0.1 percent over a 10-year period would produce a difference in balance of over 1 percent of payroll so that what we expect will happen beyond the quarter century of current estimates has a very important bearing on what will happen to future predictions of funding adequacy unless end-of-period financing is as adequate as at the beginning.

The chief trick in the estimating process is to forecast medicare's increase in hospital benefit payments in relation to wages. These benefits increase as the rate of payment per unit of service (the price) increases and as use increases. Use rises as the number of beneficiaries rise, as the beneficiaries age, and as hospital services use rises for a given age group. Hospital prices rise as the price of goods purchased by hospitals and salaries they pay to employees go up and as more services are included within a unit of services, after any offsets for productivity increases. Hospital prices have played, and are expected in the future to play, a far more significant role in medicare cost increases than have increases in use.

Hospital wages, on the average, have been rising more than wages in general; but, it is not clear to what degree the difference is the result of higher wages for similar work as opposed to paying the cost of growing complexity of hospital work that occurs with the introduction of new, advanced technology. The economics of the market would suggest that reasonably equivalent wages for similar work should, over the long term at least, be paid by hospitals to those paid in other fields so that, aside from different rates of input of technology, the impact on the cost of hospital wage rates should be about the same as that in the general economy. However, as a personal service industry, hospitals may not be able to incorporate productivity gains to offset labor cost increases as much as manufacturing concerns do.

Past medicare expenditure increases have significantly outpaced revenue increases. Ever since medicare was enacted and before, there has been a question about the duration and degree to which the rate of rising hospital costs can continue to outpace earnings in the general economy. This issue is not merely an issue for medicare or the Federal budget but for the entire economy. There is obviously a limit to the degree to which the Nation's income will be spent of health care. Straight line projections of the past into the indefinite future yield nonsense results—amounts beyond what the economy could support. (Myers, 1970.)

While there is a limit to hospital cost increases relative to GNP based on affordability, it is difficult to determine where the limit lies in the period 25 or more years into the future. The real limit, in fact, is not fixed by physical laws but depends on the public perception of the relative value of health care and public preference for health care over other potential purchases. A higher limit will be accepted as the relative value of the service appears to grow and as income rises. Expenditures vary around the country in a way that seems strongly influenced by geographic variations in income levels (Levit, 1982) relatively more seems allocated to health care in States where income is high—and the same is true internationally. As a percent of GNP, health expenditures in 1976 in nine industrial countries varied from 5.8 percent in the United Kindgom to 9.7 percent in the Federal Republic of Germany and 8.7 percent in this country, with rises continuing. Finland seems to have accepted 15 percent of GNP a a reasonable maximum for health expenditures (Freeland and Schlender, 1983) so that large future increases in American health expenditures relative to GNP are quite conceivable. However, precise prediction of such public policy based on results does not seem possible no matter how well the actuaries may do their work.

Medical insurance and the budget

There has been much less emphasis and concern expressed in public utterances with regard to the budget impact of increasing costs under either the hospital insurance or supplementary medical insurance parts of medicare than about the ability of the program to pay hospital insurance benefits in the future. For this reason, while costs for the medical insurance part (part B) of medicare have been rising essentially in parallel with those for hospital insurance, there has not been the same public call to solve this problem. The trustees' reports (Board of Trustees, Federal Supplementary Medical Insurance Trust Fund) merely report on the regular recalculation (required by the law) of the annual premium rates that provide funds adequate to finance part B, and there are no actuarial indications of fiscal difficulty for the medial insurance program.

One of the factors in increases in part B costs is the fact that the medical insurance has not had the financial advantage of a dynamic deductible. However, the annual deductible ($50 originally) was increased to $60 effective in 1973, and, in 1982, to $75. These increases were much less than medical costs have risen since the initiation of the program, so that beneficiaries have had a larger portion of their medical costs covered as the relative value of the deductible has declined. This factor has been reflected in the rising premiums.

While the rhetoric on the medicare financing crisis has emphasized the actuarial deficiency in hospital insurance, the cost-cutting legislation that was enacted recently was proposed in connection with budget legislation and was aimed largely at short-range effects. There are no signals that interest in solving medicare problems some years in the future has yet increased. It is not clear what the effect was of including the income and expenditures of the social security program, including medicare in a unified Federal budget in the sixties. This action had the initial political advantage of reducing the reported deficits in the general fund because, at that time, the trust funds were earning surpluses. In more recent periods, pressure on the unified budget has resulted in greater attention to the possibility of cuts in social security to offset the increased defense spending and the decline in revenues from large tax cuts. However, the real problem is not the publication of Government fund balances on a unified basis, but the impact of Government deficits and need to borrow on the economy. Unification or separation of the budget does not affect this impact, and it will be calculated and taken into account in either case.

Medicare costs versus total costs

At the same time that the Federal Government has become more concerned about medicare costs, the States and private purchasers have found the financial burden of State medicaid programs and health insurance for employees and others increasingly difficult to handle. A growing number of States have taken a variety of actions to try to limit the rise in health costs generally, and in medicaid specifically. A movement to form coalitions of private groups organized to take action to limit further health cost increases was started as the cost burden was felt more acutely. This is not to say that all the pressures are in the direction of lower costs. At the same time that action to hold down costs is going on, support is growing for payment for liver transplants as normal, not experimental, care—and the same support exists for any care widely perceived to improve health or save lives. Health cost limits seem universally approved only when achievable by the elimination of waste, and when on one is hurt by the cuts.

The point, nevertheless, is that the burden of health costs has essentially the same significance whether borne as part of the Federal budget or State budgets, or privately. Private and public sources are subject to the same pressures and policies for constraining and expanding costs. One of the principal differences is that, when health costs are borne through Government budgets, the burden is likely to be distributed in a fashion that is easier to bear than when similar costs are borne privately.

As is clear in table 3, both total national health costs and medicare costs have been rising sharply over the period of medicare's history more or less consistently with the way the practice of health care has changed. In 1981, medicare's hospital insurance costs were almost six times the 1970 level and medical insurance costs were more than six times the previous level. Over the same period, nonmedicare hospital costs (total costs less expenditures under medicare's hospital insurance) almost quadrupled and nonmedicare physicians' services multiplied by almost 3½ times. It should be understood that much of the difference in the rates of increase in total costs is due to the growth and the aging of the medicare population, and another part derives from the increase in costs because the disabled and persons with end-stage renal disease were covered under the 1972 legislation, rather than to higher medicare increases in use rates and prices.

ACTIONS TO CONTROL COSTS

1972 legislation

While the financial problem facing medicare remains very serious, a number of actions have been taken by the Federal Government aimed at holding down cost increases. The measures have included both actions aimed at volume of service and unit costs of services. Action aimed at adding control over the use of services was taken through the enactment of the PSRO program in 1972. At the same time, provisions limiting increases in physicians's fees allowed by medicare were adopted. Increases in physician fees were controlled by an index. Furthermore, in the same legislation, cost limits were authorized to be applied in determining the hospital costs that were to be reimbursable. Despite the legislative control on physician fee increases, medical insurance costs have continued to rise rapidly because of volume increases and because of leakage through the controls. The physician fee limitation was applied without developing a Federal definition of the various services for which fees were controlled. As a result, an unknown amount of leakage from control occurred by virtue of new services and changes in the content of services, including so-called "depackaging"—separate charges for parts of a service formerly charged for as a unit. Yet another source of leakage in the use of the index was that the index was based in part on the "costs" of practice in a period when costs increasingly included fringe benefits that physicians allowed to themselves.

One of the problems that accompanies more stringent controls for physician's fees is that if the physician bills the patient rather than billing medicare, the physician is free to charge any amount without limit, in effect shifting more of the costs of medicare-covered services to the patient. This shift has tended to reduce gradually the portion of beneficiary costs covered by medicare. This problem has inhibited more vigorous medicare action on physician fees. While the issue of whether assignment should be made mandatory has arisen periodically—even before the enactment of the original medicare law, and is currently under consideration again—concern about the effect on physician participation and the opposition of organized medicine have thus far aborted action on this matter. This is true even though the billings to patients of the difference between the physicians' total charges and those found reasonable by medicare have been the subject of the greatest number of complaints by medicare beneficiaries.

At the same time that physician fee payments were made subject to a fee limit, increasing the degree to which patients would likely be required to pay a sum in addition to medicare's payment, a limit was established on the rate of increase in medical insurance premium rates paid by beneficiaries. The limit was intended to prevent rises in part B subscriber premiums from outpacing cash benefit increases and excessively burdening the beneficiaries. As a result of this limit, beneficiary premiums fell from 50 percent of the total cost of part B to 25 percent. A step was taken in 1982 to prevent, at least temporarily, a further decline in the percentage of premiums paid by beneficiaries. The recent budget problems seem to have created an important countervailing pressure to concern about the health cost impact on beneficiaries. However, this action to shift part of the burden to beneficiaries was very controversial and suggests that further, similar shifts will not be easily accepted.

An interesting development related to cost control occurred with regard to implementation of the end-stage renal disease legislation. The discretion left to the Secretary on this matter was used to administratively install relatively strict limits on payments per dialysis, to pay physicians treating patients on dialysis either on a monthly basis or through dialysis facilities, to establish virtually mandatory assignment for these patients, and to control the growth of renal facilities. Legislation providing for prospective payment for dialysis was enacted in 1981, 2 years before prospective rates were enacted for hospitals. While expenditures for treatment of end-stage renal disease have grown rapidly, the comparatively high growth rate is due primarily to the increase in the number of patients treated, primarily because treatment resulted in an increasing number of survivors who suffer the illness. (Rettig, 1980.) The cost control efforts applied to renal disease appear to have been relatively successful in holding down unit costs.

In addition to the medicare changes, planning legislation was adopted that was also aimed at health costs. One of the goals of planning was to limit the growth of hospital plant to the necessary amount saving the costs associated with excessive plant. (Wolkstein, 1977.)

Carter cost containment proposal

The strongest proposal made thus far for Federal hospital cost control was included in the Carter cost containment plan, which was aimed not merely at limiting Federal costs but at all the hospital costs of the country, responding to the idea that health policy for medicare should parallel that for other population segments. This plan had two parts.

The first part limited hospital revenue increases each year. It was modeled on the economic stablilzation program of the Nixon era. The Carter hospital revenue control measure was accompanied by a plan to place a limit on capital expenditures for hospitals on the theory that limiting the growth of hospital capacity would provide a long-term limit on costs and force choices on where both capital and service growth should be directed. Part of the theory was that capital expenditures limitations provided less of a threat to the financial status of hospitals than cost or revenue limitations. Capital limitations deal with future actions that are within hospital control and may be planned for in advance, while costs and revenues largely flow from decisions made over prior decades and limiting revenues sometimes imposes an immediate need to cut services, reduce staffing, and make other difficult or even impossible changes to keep costs within revenues.

Little enthusiasm developed in support of either of these Carter-supported measures in the Congress. However, the capital control ideas have apparently continued to intrigue persons concerned with health issues and are involved in current considerations in New York, Michigan, and Massachusetts. All-payer controls on hospital costs are incorporated in State programs in New York, New Jersey, Maryland, Massachusetts, and Maine.

Actions in 1982 and 1983

The 1972 medicare cost control actions comprised virtually the entirety of Federal legislative activities to reduce costs until the Tax Equity and Financial Responsibility Act of 1982 (TEFRA) and the Social Security Amendments of 1983 were enacted. TEFRA included a whole miscellany of small cutbacks, including the medical insurance premium action previously referred to. However, the 1983 legislation included the substitution of a hospital prospective payment system for the former reasonable cost basis of reimbursement and represents, by far, the biggest change in the medicare payment system in its history. Significantly, the cost control aspect of the plan is aimed at hospitals, not beneficiaries. This plans applies only to medicare, not to all payers, so that despite tight limits on medicare payments under this law, hospitals would have the opportunity to earn additional revenues from other payers, and this room for cost shifting provides something of a relief valve to the hospitals. However, the proponents of controls on all hospital costs arranged to include in the law a provision under which States could obtain waivers from the basic medicare prospective payment plan if they instituted one that applies to all payers. While the plan is quite stringent, considerable attention was paid to the presentations of hospital spokemen concerning provisions required to maintain a vigorous hospital industry, and the legislation meets some of the concerns of the industry.

Development of prospective rate systems

The prospective payment plan is not an unexpected development. Even before medicare was enacted in 1965, various hospital reimbursement approaches were considered. (Wolkstein, 1968.) However, no prospective payment system had been developed to a degree that suggested that one could be confident that results would prove as acceptable as would a cost-based plan.

As early as 1967, however, legislation was adopted that permitted medicare to experiment with systems of incentive reimbursement to see whether research grants might be used to support development of a better reimbursement plan. The experiments that were conducted initially were entirely voluntary. As a result, it seemed unlikely that an effective cost control plan would be tested in the course of these experiments. Effectiveness in cost control would almost certainly produce at least some losers, and no one could be expected to volunteer to be a loser.

Legislation was proposed in the late 1960's that would have allowed compulsory participation in medicare experiments, but this legislation did not gain support. In 1972, however, provision was made both for State medicaid payment to hospitals to be on bases other than reasonable cost, as well as authority for the Secretary of Health, Education, and Welfare to analyze the alternate State payment systems that were applied and to develop prospective rate systems. These provisions triggered the State moves to test all-payer cost control systems and allowed the development of the information that has since become available on prospective rate systems. The States became arenas for testing prospective rate methods on a compulsory basis with Federal support.

In the course of this State and Federal effort, considerable progress was made on solving a problem that has for years inhibited the move to prospective rates. One of the principal concerns about the application of prospective rates was that the state of the art did not permit determination of whether a variation in cost between institutions resulted from differences in efficiency or differences in services provided, patients served, or quality of service. A prospective rate system that is cost neutral or cost saving requires a transfer of payments from some providers to others. To be acceptable, there must be considerable confidence that the penalized and rewarded institutions are reasonably selected. As a consequence of lack of such confidence, the 1972 legislation did not provide for prospective rates but provided instead for a cost-based system applying cost limits that penalized some hospitals but gave no rewards. Furthermore, because credible case mix measures were not available, the limits were applied only to routine services because the use of routine services is not as powerfully affected by patient mix, which could not be measured well, as is that of ancillary services.

With the acceptance of a new patient mix measure came adoption this year of a medicare prospective rate system applied to all services. The new prospective rate system is not a panacea, however. For one thing, some providers will, undoubtedly, find ways to take advantage of loopholes on the system. Also, the system is as open to increases in cost because of increases in admissions, as occurred under precious law. However, because the new system is applied on a stay basis, it normally provides the same payment regardless of the duration of the admission or volume of services provided within the stay so that some volume increases are inhibited. Furthermore, technological changes, one of the factors that has made cost forecasting for medicare difficult, appears to have been put much more under control. Major technological improvements which change treatment processes will continue to have to be reflected ultimately in the prospective rate, but not immediately, so that expensive changes in technology are also inhibited somewhat. Overall, the rate of future increases would seem to have been made more predictable in relation to general inflation under the new plan.

The final word on whether the plan will remain essentially as enacted depends on the acceptability of the reward and penalty system of the new legislation when it is tested out in practice. Even if accepted in principle, considerable further adjustments to improve the rate-setting techniques would not be surprising, especially if, as a consequence of penalties, access of patients to care is considered undesirably hampered in some localities.

Furthermore, the law provides considerable leeway for administrative discretion on the level of allowances to be made in future years for increasing payment rates to reflect cost increases resulting from service improvement. Actuarial forecasts require prediction of how this leeway will be used over the years as administrators in power change. In other words, public policy remains a primary factor establishing future costs. Forecasting in this area seems to fall more nearly into the realm of politics or social science or, perhaps, the reading of tea leaves than it does into actuarial science.

FINANCING IMPLICATIONS OF MEDICARE POLICY

The policy (or at least intentions) behind medicare legislation and administrative action has played and will continue to constitute the most important factor determining the financial status and impact of the medicare program. The use and cost of health services are not based on some scientifically determinable physical or natural law, but derive from the policy path the country decides, explicity or implicitly, to take. Despite the new prospective payment legislation, the largely implicit policies that we follow in health care explain to a considerable degree our present health financing predicament and suggest that our problem with financing medicare will not be easily solved in the future. These unstated policies include:

General health policy

1. Taking a very short-term and pragmatic view to health cost goals—not seeking to establish any policy or course of implementation as to the intended portion of national income to be spent for health for the United States or the portion of the Federal budget to be spent on health care, except on a year-to-year basis.
2. Placing relatively high priority on health expenditures, compared with those for other purposes and providing support for making available the full available technology to preserve life and normal function, almost without regard to cost (witness recent public reaction to liver transplants). Public perception of health services seems different from its attitude toward other services.
3. Supporting adequate hospital financing for essentially all hospitals, despite their costs, to assure the people access to the services they may require.

Medicare policy

1. Providing medicare beneficiaries with health insurance coverage as good as is generally provided to the employed populations, thereby providing medicare beneficiaries with reasonably equal access to mainstream medical care.

2. Avoiding making significant shifts of costs from taxpayers to beneficiaries.

3. Deferring tax increases or other unpleasant actions to balance outgo and income of the hospital insurance trust fund until the last possible date, possibly implying a lack of confidence in the reliability of the forecasts.

As long as these policies hold, the Nation must be prepared to meet the rising financial demands that flow from its essentially generous health policy. The pragmatic and short-term expenditures policy will, in all likelihood, require periodic adjustment to financing provisions to match them to costs. Because it will remain impossible to predict long-term costs with accuracy, it seems equally impossible to legislate a definitive long-term financing plan. In other words, relatively frequent readjustments of the financing provisions of the medicare system will likely continue to be a regular feature of the program well into the future. Only a very unexpected, to me at least, change in public policy toward support for health care can change this scenario.

TABLE 1.—AVERAGE COST AND ACTUARIAL BALANCE OF HOSPITAL INSURANCE AS A PERCENT OF TAXABLE PAYROLL

Year of trustees' report	Average cost intermediate cost basis [1]	Actuarial balance
1970	2.04	−0.48
1971	2.20	−.62
1972	2.21	−.61
1973	2.67	−.04
1974	2.63	+.02
1975	2.86	−.16
1976	3.39	−.64
1977	3.96	−1.16
1978	3.86	−1.12
1979	3.82	−1.04
1980	3.80	−.99
1981	4.15	−1.31
1982	4.62	−1.85
1983	4.04	−1.17

[1] In periods before 1981, intermediate cost is as referred to in the relevant reports of the board of trustees (assuming the earnings base would be kept up-to-date in the period before the law provided for automatic adjustments); and, after 1987, it is an average of Alternatives II–A and II–B. In periods before 1972, the cost includes only benefits and administrative expenses; but, after 1971, it also includes an allowance for building and maintaining the trust fund level equal to 1 year's expenditures until 1980 and ½ year, thereafter. The averages are calculated over a 25-year period beginning with the period in question.

Source: Annual reports of the board of trustees of the Federal Hospital Insurance Trust Fund.

TABLE 2.—EMPLOYEE CONTRIBUTION RATE SCHEDULES

[In percent]

	1965 act	1967 act	1972 act	Current law
1966	0.35			
1967	.50			
1968–72	.50	0.60		
1973	.55	.65	1.00	
1974–75	.55	.65	1.00	0.90
1976–77	.60	.70	1.00	.90
1978	.60	.70	1.25	1.05
1979	.60	.70	1.25	1.05
1980	.70	.80	1.25	1.05
1981–84	.70	.80	1.35	1.30
1985	.70	.80	1.35	1.35
1986	.70	.80	1.45	1.45
1987 and after	.80	.90	1.45	1.45

TABLE 3.—NATIONAL HEALTH EXPENDITURES AND MEDICARE EXPENDITURES

[Dollars in billions]

	Total	Percentage of GNP	Hospital	Physicians	Total medicare	Hosp. Ins.	Med/ Ins.[1]
1960	$26.9	5.3	$5.7	$2.0			
1965	41.7	6.0	13.9	8.5			
1970	74.7	7.5	27.8	14.3	$7.4	$5.3	$2.1
1975	132.7	8.6	52.1	24.9	16.0	11.6	4.4
1980	249.0	9.5	100.4	46.8	36.8	25.6	10.7
1981	286.6	9.8	118.0	54.8	43.6	30.7	12.9

[1] For periods ending June 30.

Source: Waldo and Gibson, 1982, and Board of Trustees Federal Hospital and Supplementary Medical Insurance Trust Funds.

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RESTRUCTURING MEDICARE BENEFITS

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INTRODUCTION

Close behind the crisis over the financing of the social security system has arisen a similar concern about the fiscal solvency of the medicare program. The past several years particularly have witnessed a serious erosion of the medicare trust funds, brought about by sustained high rates of increase in benefit payments that have not been matched by increases in revenues paid into the medicare system. The increased benefit payments have resulted mostly from the rapid rise in medical costs, rather than the expansion of program benefits. The outcome of these trends, according to the Congressional Budget Office[1] will be a deficit in the Hospital Insurance Trust Fund, one of the two that finances medicare. CBO projects that the deficit could occur as early as 1987 and the annual deficit in year 1990 could be $18 billion, increasing to $63 billion in 1995.

This projected deficit will prompt the Congress and American people to focus their attention on the medicare program. Three general approaches to solving medicare's financial problems are likely to be considered: stricter controls on payments to providers of service (the supply-side approach); more stringent financial requirements for medicare beneficiaries (the demand-side approach); and an increase in revenues through higher taxes, increased premium payments, or increased allocation of general revenue funds to medicare. With the projected annual Federal deficit of $200 billion, the amount of additional Federal resources can be allocated to medicare would be severely limited. The eventual solution, therefore, would likely to involve a combination of all these approaches. The debate about the various options presents an excellent opportunity to reexamine medicare's structure and to consider some fundamental reforms.

Medicare was legislated almost 20 years ago. Rapid changes have taken place in health care during the intervening years. There have been dramatic changes in the health care delivery system. Numbers of physicians per capita have increased greatly. Developments in medical technology have accelerated. HMO's have spread, and for-profit firms are playing a greater role. Consequently, the anticipated crisis in medicare financing can be a viewed as a stimulus to restructure the program, in light of increased knowledge, and for a changed environment.

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[1] Congress of the United States. Congressional Budget Office "Changing the Structure of Medicare Benefits: Issues and Options" (March, 1983) p. 66.

This paper focuses on the demand-side approaches, addressing the options for restructuring beneficiaries' financial participation in the program. Such a restructuring should serve two purposes: to improve the efficiency of the health care system, and to reduce the anticipated deficit. We view changes in the cost-sharing provisions of the medicare program to be an important component of any overall policy changes that are made to solve the program's fiscal problems, but that such changes should only be part of a multifaceted strategy.

THE CURRENT PROGRAM BENEFIT STRUCTURE AND COST-SHARING PROVISIONS

The medicare program is designed to finance acute medical care, mainly for elderly Americans. The program is divided into two parts: hospital insurance (HI) and supplementary medical insurance (SMI). The HI component covers short-term hospitalization, skilled nursing care, and home health services, while the SMI portion covers physicians' services, outpatient hospital care and laboratory fees, as well as home health care. The program does not cover long-term nursing home care, dental care, or drugs.

Cost-sharing is now imposed on medicare beneficiaries who use medical services. Under HI, a deductible amount approximately equal to the cost of the day in a hospital ($356 in 1984) must be paid by beneficiaries who are hospitalized. Apart from this deductible, the HI program pays in full the cost of the first 60 days of hospitalization for a spell of illness. From the 60th through the 90th days, a copayment of $89 per day (again, as of 1984) is required. Beyond the 90th day, each beneficiary has a lifetime reserve of 60 additional days but is assessed $178 for each day that is used.

HI also covers up to 100 posthospital days in a skilled nursing facility (SNF). After 20 days, the beneficiary is required to pay an amount per day that is equal to 12.5 percent of the inpatient hospital deductible ($44.50 in 1984).

Under SMI, beneficiaries are responsible for an annual deductible of $75, beyond which medicare pays 80 percent of the "reasonable charges" for covered services. If the provider's charges are reasonable according to medicare standards, then the patient's share will be 20 percent of the total. If they exceed such standards, however, the beneficiary is liable for the excess amount in addition to his 20 percent share.

Arguments for and against cost-sharing

Patient cost-sharing, the direct payment by consumers of some portion of the costs of medical care at the time of use, has been a topic of controversy throughout the long debate on insuring medical services. As the inflation in medical costs continues, observers have become increasingly pessimistic about the likely success of regulatory efforts. Attention has turned to the demand side, and to the potential benefits of cost-sharing. Cost-sharing promises economy; numerous empirical studies have found that cost-sharing avoids excessive use of medical services and makes the medical system easier to "police." [2]

Several sound arguments justified the design of medicare's cost-sharing provisions. First, cost-sharing reduces the cost of the program to the Government. Because the program must be financed through taxes or other revenues, one that is without cost-sharing provisions would require greater amounts of taxes or a reduction in funds available for other Federal programs. The use of cost-sharing thus permits medicare to cover a broader range of services than would otherwise be possible.

Second, cost-sharing makes the consumer cost-conscious, discouraging unnecessary use of services. Deductibles and co-insurance provide patients and physicians with an incentive to choose the most cost-effective forms of care. Without cost-sharing, the burden of monitoring the appropriateness of care must be borne entirely by regulatory agencies. As discussed in the next section, considerable evidence has accumulated that the presence of cost-sharing has a substantial effect on patients' overall demand for services as well as the mixture of services obtained. Cost-sharing is increasingly recognized as an effective means of reducing inflation and providing incentives for the effective use of resources.

Discussions about the effect of cost-sharing on demand for health services assume that patients initiate demand or physicians act as their perfect agents. We do not know how well the agency relationship operates. As presented later in this section, it has been argued that physicians are affected only indirectly by the cost-sharing requirements of their patients and hence cost-sharing may not affect demand. However, it can also be argued that these indirect effects are sufficient to alter physicians' behavior as well as that of their patients. Physicians are generally aware of the financial implicatins of their decisions for their patients and take that information into account in developing treatment protocols. The empirical studies of the impacts of cost-sharing on demand are reviewed in the next section. These studies measured the total effects of cost-sharing, they are not separated between patient or physician initiated changes in demand.

Related to this is the potential effect of cost-sharing on the medical care market. Cost-sharing should induce patients to shop for the least expensive providers who can deliver services of acceptable quality at minimum cost. When patients shop for the least costly providers, competitive market pressures are generated among them. The lower cost, presumably more efficient providers would attract more patients, while the higher cost, less efficient providers would lose patients. Market pressures would therefore force the high-cost providers to improve the efficiency with which they deliver medical services.

Finally, the high deductible incorporated in the HI program is intended to encourage patients to seek outpatient treatment instead of inpatient hospital care. Moreover, because elderly people are more likely to suffer from chronic illness, there may be a tendency to admit elderly patients into skilled nursing facilities (SNF) for custodial care. To reduce the inappropriate use of SNF, a 3 day hospitalization is required before a beneficiary becomes eligible for SNF benefits. The high deductible for inpatient hospital care is also intended to deter unnecessary use of skilled nursing facilities.

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[2] Douglas Conrad and Theodore R. Marmor, "Patient Cost Sharing," in Judith Feder et al. (eds), National Health Insurance: Conflicting Goals and Policy Choices (Urban Institute, 1980).

In response to these arguments in favor of cost-sharing, critics have pointed out that cost-sharing may well deter utilization, but in doing so, discourage patients from obtaining necessary services. The deterrent effects on utilization could adversely affect patients' health and reduce the quality of care they received. As a result of cost-sharing, patients may delay treatment until an illness becomes so severe that the total cost of treatment is higher than it would have been if prompt treatment had been sought. Similarly, physicians may withhold necessary tests which would have correctly diagnosed the disease in time to treat it effectively.

Some argue that patients have insufficient knowledge to make rational calculations of the benefits and costs of their treatment choices. Moreover, patients seldom know in advance what treatment they will need and thus cannot determine its cost. Physicians, who presumably possess more information, are only indirectly affected by the price facing their patients. As a result, it is argued, cost-sharing would not generate sufficient competitive pressure in the market place to promote efficiency.

Another major criticism of cost-sharing relates to equity. A uniform deductible or coinsurance rate would place a greater burden on the poor than on high income families. On the other hand, if the cost-sharing is related to family income levels, program administration would become more complicated and costly.

Finally, the critics argue that individuals would purchase supplementary insurance to reduce their out-of-pocket medical expenses. This could mitigate any effects on the demand for services that cost-sharing may bring about. For medicare beneficiaries, private insurers have offered the medigap policies. They are designed to cover the gaps in medicare coverage, such as the deductible and coinsurance amounts. At current cost-sharing levels, medigap policies have been purchased by a sizable proportion of medicare eligibles at prices that far exceeds their actuarial values. This convincingly demonstrates the risk-averse nature of the medicare population.

Regulating consumer behavior in the presence of insurance: a review of the empirical studies

The availability of health insurance through medicare would be expected to increase beneficiaries' demand for medical services. Because medicare provides broad coverage of hospital care and physicians' services, participants in the program are made to feel better off for having this insurance policy. This results in two effects: so-called moral hazard, and a price effect. Moral hazard relates to specific behavioral responses to the incentives created by insurance coverage. Because of the availability of insurance, people may alter aspects of their lifestyles that will adversely affect their health, in the knowledge that they would be cared for if they become ill. For example, they may decide not to stop smoking or to lose weight, which they might have done if they or their families had been directly responsible for the financial consequences of associated illnesses.

Related to this, medicare causes medical care prices to seem lower than the actual value of the resources employed. This so-called price effect will also provied a motivation for medicare beneficiaries to obtain more services than they would if they had to pay the full cost. The price effect would not be very important if the consumption of medical services were determined only by medical need. The influence of economic factors, such as insurance coverage, on utilization levels has been well documented, however.[3]

A number of empirical studies have attempted to evaluate the quantitative effect of cost-sharing on the utilization of health services. Doing so is normally difficult, due to the usual absence of a suitable control population. Among the researchers who have been able to identify an appropriate control group are Scitovsky and Snyder,[4] Phelps and Newhouse,[5] Enterline, et al.,[6] Beck,[7] Roemer, et al.,[8] Scitovsky and McCall,[9] and most recently, Newhouse, et al.[10]

The evidence strongly indicates that coinsurance significantly affects consumers' use of health services. The general conclusion has been that the more consumers must pay out of their own pockets, the fewer services—particularly outpatient physicians' services—they will demand. For example, Scitovsky and Snyder examined the utilization patterns of the subscribers to a medical plan before and after a 25-percent coinsurance provision was instituted. They determined that physician services per subscriber fell by 24 percent after the coinsurance provisions took effect. Phelps and Newhouse analysed the same data and concluded that the decline in physician visits amounted to 1.37 per person per year after other subscriber characteristics had been taken into account. In a followup study, Scitovsky and McCall determined that the lower use rates registered soon after the coinsurance took effect were maintained during subsequent years, indicating that the earlier changes had not been a short-term phenomenon.

Several other studies have assessed the effects of changes in the cost-sharing provisions of Government medical care programs. Two of these studies are Canadian. Enterline, et al., studied the effects of providing free medical care in the Province of Quebec, which was begun in 1970. They found that per capita physician visits remained constant, but that the distribution of persons receiving services shifted markedly to lower income groups. Accompanying these shifts was an increase in the percentage of selected conditions for which people consulted a doctor, a near doubling of the waiting time for a doctor's appointment, and an increase in waiting time in the doctor's office. Beck evaluated the introduction of copayment in Saskatchewan in 1968, as it affected poor families. He found that the copayments of $1.50 for physician office visits and $2 for home, emergency, and hospital outpatient visits reduced the use of physicians' services by the poor by 18 percent. This was substantially greater than the estimated 6–7 percent reduction by the general population, although the author could not determine for either groups how much of the reductions was attributable to declines in unnecessary care. Finally, Roemer, et al., examined the effects of a copayment experiment involving medicaid beneficiaries in California. They found that, at first, utilization of ambulatory physician visits declined when copayments were introduced. Later, however, hospitalization rates rose, which they interpreted as evidence of neglect of early medical care resulting from the institution of copayments.

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[3] See, for example, C. E. Phelps and J. P. Newhouse, "Coinsurance, the Price of Time, and the Demand for Medical Services," Review of Economics and Statistics 56:334-42, (1974).

[4] A. A. Scitovsky and N. M. Snyder. "Effect of Coinsurance on Use of Physician Services," Social Security Bulletin 35:3-19 (1972).

[5] C. E. Phelps and J. P. Newhouse, "Effects of Coinsurance: a Multivariate Analysis," Social Security Bulletin 35:20-9 (1972).

[6] P. E. Enterline, V. Salter, A. C. McDonald, and J. C. McDonald, "The Distribution of Medical Services Before and After "Free" Medical Care—The Quebec Experience," New England Journal of Medicine 289:1174-8 (1973).

[7] R. G. Beck, "The Effects of Co-Payment on the Poor," Journal of Human Resources 9:129-42 (1974).

[8] M. I. Roemer, C. E. Hopkins, L. Carr, and F. Gartside, "Copayments for Ambulatory Care: Penny-Wise and Pound Foolish," Medical Care 13:457-66 (1975).

[9] A. A. Scitovsky and N. McCall, "Coinsurance and the Demand for Physician Services: Four Years Later," Social Security Bulletin 40:19-27 (1977).

[10] J. P. Newhouse, W. G. Manning, C. N. Morris, L. L. Orr, et al., "Some Interim Results from a Controlled Trial of Cost Sharing in Health Insurance." New England Journal of Medicine 305:1501-7 (1981).

The most recent, and most generalizable, research on the subject of copayments is that reported by Newhouse, et al. Data for this assessment were drawn from a controlled trial of alternative health insurance coverages. The coverages varied widely in their coinsurance provisions, which ranged from no coinsurance (that is, free care) to 95-percent coinsurance. The latter policy resembled a catastrophic health insurance policy. Coinsurance provisions were coupled with limits on the total expenditures that a family would be liable. The limits were generally related to family income.

A number of important findings grew out of the Newhouse, et al. study. Overall, the authors found that per capita expenditures for inpatient and ambulatory services rose steadily as coinsurance decreased. Persons receiving free care incurred expenditures that were about 60 percent higher than those with catastrophic coverage. Newhouse, et al., found no evidence to support Roemer, et al., conclusion that high-deductible plans are ultimately more costly because they encourage neglect of illnesses and consequently result in higher hospitalization rates. In fact, they found that the probability of hospitalization was highest for persons receiving free care. Finally, they concluded that the poor were not disproportionedly affected by cost-sharing, though they would have been had the cost-sharing not been related to family income.

The empirical literature, as we have noted, supports a definitive conclusion that the more medical care is covered by insurance, the more services will be used and, conversely, the greater the proportion of costs patients must assume, the fewer services they will seek. These patterns appear to apply to ambulatory care—and especially to physician visits—more than hospitalization, though the two are related. What is still not clear is the interpretation of the patterns observed. The long-standing question thus still remains unanswered: Is there too much use with full coverage, or too little with high coinsurance rates? The evidence that is available suggests that both may be true to some extent.

PROBLEMS WITH THE CURRENT MEDICAL COST-SHARING PROVISIONS

As we have noted, there are a number of strong arguments for incorporating cost-sharing provisions into insurance programs.

Medicare's experience, however, has demonstrated that the behavioral responses of both beneficiaries and providers can largely offset the intended benefits of cost-sharing. Such responses can now be seen as a result of the faulty design of the medicare benefit structure and of the market imperfections that were not well understood in the mid-1960's when medicare was enacted.

A major flaw of medicare's benefit structure is that it violates the primary purpose of insurance: to protect the beneficiary from financial ruin. The cost-sharing provisions of HI and SMI leave beneficiaries to face unlimited liabilities in the event of catastrophic illness. Under HI, patients are required to pay the full hospital cost after 150 days of hospitalization, after they have already paid high cost-sharing amounts beginning on the 91st day. In addition, SMI requires patients to pay 20 percent of reasonable charges for physician visits and other outpatient services. For expensive surgery, the 20 percent cost-sharing requirement could represent a significant drain on a patient's financial resources. Consequently, the risk of substantial financial loss, however small it might be, would encourage beneficiaries to buy supplementary insurance coverages. This flaw in medicare's benefit structure helped to create the demand for medigap insurance.

Medigap, as mentioned earlier, is the supplementary insurance sold by private insurers to finance the cost-sharing under HI and SMI. Two-thirds of medicare beneficiaries have voluntarily purchased this coverage.[11] Medigap premium rates are high. The 1983 premium rate in Massachusetts is $412.[12] By assuming financial responsibility for cost-sharing amounts, medigap works to offset the cost-consciousness that medicare's cost-sharing provisions were intended to encourage. Medicare benefits, therefore, must be restructured before the cost-sharing provisions will function in the manner intended.

A second major flaw in the medicare cost-sharing provisions is that they were designed under the assumption that beneficiaries will have adequate information about the relative cost of services rendered by different providers as well as the alternative modes of care that would be available in treating an illness. The reality, however, is that patients lack adequate information about the fees charged by physicians and prices charged by hospitals. Such information is not readily available. More importantly, it is usually the physician who makes the decisions about what tests should be done, what procedures should be performed, and where the patient should be hospitalized. While the patient normally makes the initial selection of a physician and decides when to consult him, subsequent decisions are mostly made by the physician acting as patient's agent. Both patients and physicians lack comparative information about the cost of tests, medical procedures and hospital care as well as their effectiveness. As a result, even when cost-sharing is paid directly by the patient (that is, unsupplemented by private insurance) neither the patient nor the physician may be able to invest the resources required to obtain the data necessary to make well-informed choices.

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[11] Congress of the United States, Congressional Budget Office, Changing the Structure of Medicare Benefits: Issues and Options (March 1983), p. 38.

[12] Boston Globe, Aug. 31, 1983.

Price variation among providers of service

Within the same market area, there is substantial variation in the prices charged by hospitals and physicians for what appear to be the same services. There are many reasons for these charge differences. Some result from real product differences that may lead to different health outcomes. Others result from differences in amenities or other factors that affect the cost of the service but may not influence the outcome.

Some differences in charges arise because of the differences in technical competence among providers. For example, a cardiovascular surgeon with a high success rate in performing coronary artery bypass surgery is likely to charge more than another surgeon who has a lower success rate. The more successful surgeon can charge higher prices because more patients are attracted to him by his reputation and by physician referrals. He can raise his prices and still maintain a satisfactory patient demand. In contrast, a less successful surgeon may not be able to maintain a satisfactory patient demand if he raises his prices. Higher fees, however, are not necessarily associated with better medical care. Many less successful physicians are able to charge high fees because patients lack sufficient knowledge to evaluate doctors' technical capabilities. Moreover, patients and physicians alike find it difficult to obtain accurate information on physicians' charges. Often, the cost of obtaining information will be very high because the patient has to sample the services of a physician before he can obtain sufficient information about both his charges and his competence. Consequently, patients often base their selection of doctors on factors other than price.

Other charge differences are due to the different amenities of the providers, such as air-conditioned buildings, carpeted floors, and gourmet cooking. Some physicians may have higher costs because they have more attractive waiting rooms, more courteous secretaries, designer dressing gowns, well located offices, and so forth. These differences will not necessarily affect the health conditions of patients, yet they will increase the satisfaction of patients when they get care.

Lastly, both hospitals and physicians have different production costs because of the variation in their managerial capabilities and in the scope of their activities. Management of health care institutions has not received close attention until recently. Some institutions are well managed while others are operated very inefficiently, and these differences can produce wide variation in the cost of services produced. Other cost differences arise because of differences in the scope of activities performed. An important example concerns teaching and nonteaching hospitals. Apart from quality of care differences, costs may vary between the two groups because teaching hospitals are involved in education and research activities that are not performed in nonteaching facilities. Many of these activities benefit society at large, although they are financed primarily by patients (or by insurance plans on their behalf).

Examples of interprovider price variation are shown on tables 1 and 2. Table 1 illustrates the allowed charges for selected DRG's by hospitals within a single county in New Jersey. Comparisons of these data indicate that, for a given DRG, allowed rates could vary by approximately 100 percent. For example, the allowed charge for angina (medical) in the lowest cost hospital was $1,960, and in the highest cost hospital, $3,646. Wide variation in hospital reimbursement rates are found in most procedures.

TABLE 1.—COMPARISON OF REIMBURSEMENT RATES FOR SELECTED DRG'S IN ESSEX COUNTY, NEW JERSEY, 1981

DRG category	Range of reimbursement		
	Low	Average	High
Vaginal delivery, without complications	$1,114	$1,411	$2,004
Cesarean section, without complications or comorbidity	1,799	2,339	3,609
Angina, medical	1,960	2,641	3,646
Lens, surgical	1,201	1,504	2,180
Back disorder, medical	1,807	2,141	3,063
Gastrointestinal disorder, age 69 or less, with comorbidity	709	967	1,521

Source: Author's tabulation of data provided by the New Jersey Department of Health. The DRG rates are partly based on each hospital's actual cost and partly on the state's average cost. Therefore, the differences in actual cost among hospitals are greater than the DRG rates shown.

Greater magnitude of variation exists among physicians who practice in the same geographic area. Table 2 illustrates the differences in physicians' charges for three frequently performed procedures. These data reveal that charges can vary by more than 100 percent in the same geographical area for surgical services and by as much as 200 percent for a medical service.

TABLE 2.—COMPARISON OF PHYSICIAN FEES FOR SELECTED PROCEDURES IN SEVERAL COMMUNITIES IN CALIFORNIA

Procedures and communities	Low	High
1. Normal delivery:		
Alameda County, Calif	$500	$950
Los Angeles, district No. 1	500	1150
Los Angeles, district No. 10	500	950
San Francisco, area No. 3	575	1050
2. Hemorrhoidectomy, complete:		
Alameda County, Calif	550	900
Los Angeles, district No. 1	450	1,050
Los Angeles, district No. 10	500	900
San Francisco, area No. 3	500	950
3. Initial office visit—complete physical and history:		
Alameda County, Calif	50	150

TABLE 2.—COMPARISON OF PHYSICIAN FEES FOR SELECTED PROCEDURES IN SEVERAL COMMUNITIES IN CALIFORNIA—Continued

Procedures and communities	Low	High
Los Angeles, district No. 1	50	130
Los Angeles, district No. 10	50	140
San Francisco, area No. 3	50	150

Source: William C. Hsiao. "Patterns of Physicians' Charges: Implications for Policy." Proceedings of Conference on Regulating Health Care Costs. U.S. Health Care Financing Administration, Washington, D.C., September 1978. The 1971 fees are updated to 1982 prices.

The presence of such price variation and of so many reasons for cost differences raise an important public policy question: what charges are appropriate for a compulsory social insurance program, such as medicare, to pay? In our view, patients and physicians should continue to make choices about how best to obtain medical services. However, they should do so in light of vastly increased information and with enhanced incentives to make appropriate choices. Currently, as we have noted, there is little information and there are few incentives. In fact, given the flat deductible and coinsurance amounts required for hospital care, the current system encourages patients to use the most expensive hospitals. The challenge facing the designers of a benefit structure is to provide enhanced incentives for the appropriate use of services while at the same time maintaining patient's financial access to care. As part of this process, it is imperative that medicare provide its beneficiaries with adequate information on which to base their choices, so that self-rationing results in outcomes that benefit consumers and the program alike.

Proposed Reforms

Medicare's financial problems are complex. There are a number of underlying causes, including the flawed benefit structure, the open checkbooks provided to hospitals and physicians who can fill in any amount they want, and the legal and professional independence given to physicians in making medical decisions. As we continue to emphasize, no one solution can solve all of these problems. Stricter regulation of providers is one partial remedy. Raising taxes is another. Restructuring medicare benefits is yet another. Each of these remedies can address some part of medicare's financial difficulties, and can contribute to reducing the overall inflation in medical costs. No single remedy, of course, will be a panacea.

With respect to benefit restructuring, we believe that such a restructuring should take place to achieve several primary objectives. First, the altered benefit structure should provide financial protection to beneficiaries and access to the medical services they need but cannot afford. Second, the structure should be designed to encourage the efficient production of medical services and to reduce unnecessary medical care. Third, the benefits should be provided on an equitable basis. If patients have to share in the cost of medical care, they should do so according to their ability to pay. Fourth, benefits should be restructured to achieve savings in program outlays. Finally, the structure of medicare benefits should be designed to minimize the beneficiaries' need to supplement those benefits with private insurance.

The primary purpose of any insurance plan is to protect the insured from financial catastrophe. The current benefit structure, as we have noted, fails to serve this purpose when it leaves beneficiaries with unlimited liabilities. This flaw can be remedied by limiting the patient's share of the medical costs. Equity considerations, however, necessitate that the limit be linked to beneficiaries' family income. In order to achieve Federal savings from an increase in cost sharing as well as an equitable distribution of the cost sharing burden, we have developed a set of proposed revisions. The conceptual framework for those modifications is presented below. Specific rates and amounts are provided mainly for illustrative purposes.

Health insurance

Uniform deductibles and coinsurance would be replaced by amounts that would vary according to provider cost category, as described below. The 1-day deductibles for hospital care would be retained, but it would be based directly on each hospital's actual charges. From days 2 through 60, coinsurance rates of 0, 10, or 20 percent of charges would be assessed, depending on the hospital's cost category. Similarly, for skilled nursing facilities, a 25 percent copayment would be required after 20 days of care, which again would be based upon the actual charges of each SNF.

Supplementary medical insurance

An annual deductible of $100 per beneficiary would become effective January 1, 1984. The deductible amount would thereafter be indexed annually, according to the physician price index. Coinsurance rates would again be tied to the physician fee category. The coinsurance rate would be 10, 25, or 40 percent of charges exceeded the deductible, depending on the fee category of physician from which the care was received.

Maximum limit on cost sharing

An income-related [illegible] would be placed on each beneficiary's overall liability for the cost of covered services (HI and SMI combined). For those with family incomes below $10,000 per year, the limit would be $1,000. For those in the $10,000–$20,000 income range, the limit would be $2,000. For all other, the limit would rise to $4,000. [13]

The cost-sharing provisions in the proposed plan are designed to encourage patients to select the least costly provider. The Federal Government would classify hospitals into three broad categories. In each region (such as a health service area), hospitals would be grouped into high, intermediate, and low cost facilities, based on the prior year's average cost for selected diagnosis related groups (DRG's). The necessary information to construct these categories is already being collected by hospitals and by the Government as part of the recently implemented DRG-based reimbursement system for hospitals. Patients would then pay a different coinsurance rate depending on the cost category of the hospital in which their care was received. These "price" comparisons of area hospitals should be widely disseminated to the consumers and physicians.

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[13] In order to remove the "notch problem" for those with family incomes between $10,000 and $12,000 and $20,000 to $24,000, the maximum limit would rise above the $1,000 and $2,000 levels, respectively, by $1 for every $2 increase in family income. Also, these dollars should be indexed to the Consumer Price Index.

Some patients may have to be hospitalized in higher cost facilities for sound medical reasons. Under our system, these patients would have to pay a higher coinsurance rate, but their liabilities would be limited by a ceiling. Some patients may choose to go to higher cost facilities for convenience, better amenities, or because a particular physician uses that facility. If they made that choice, however, they would have to pay more.

Our proposed system would provide consumers with an incentive to weigh the costs and benefits of selecting the higher cost versus lower cost hospitals. In the long run, the informed choices made by patients directly or through their physicians could exert significant market pressures on hospitals to economize. Prestige and sophistication would not be the sole criteria for patients and physicians in selecting a hospital, as they frequently are now. Cost and efficiency will also be considered. These decentralized market pressures could yield large dividends to the Nation in reducting waste, duplication, and unnecessary services.

Our proposed plan would also require the Federal Government to classify physicians into three broad price categories: high, intermediate, and low. The amount of cost sharing would then vary according to the price category of physician from whom care is received. The criteria for the classification would be based on the fees charged for selected commonly performed procedures. The classification of physicians would again be done by service area, and the category to which each physician belongs would be widely disseminated to all consumers.

Discussion

The proposed plan would insure medicare beneficiaries against financial ruin by limiting their liability. As we have discussed earlier, equity considerations require that cost-sharing provisions be related to the beneficiaries' ability to pay. Our plan proposes to limit each beneficiary's maximum liability according to his family income so that his out-of-pocket payments will never exceed a fixed amount. For example, a beneficiary whose family income is below $10,000 would be required to pay up to, but no more than, $1,000 in 1984. Current law places no ceiling on the amount he is required to pay. Under our scheme, the maximum limit would increase with family income, reaching a $4,000 ceiling for those beneficiaries whose family income exceeds $24,000. For those elderly people who are eligible for medicaid, required cost-sharing amounts will continue to be paid by medicaid.

Placing a ceiling on beneficiaries' liability would reduce the need for beneficiaries to purchase supplementary insurance. Medicare enrollees can budget for and set aside the amount of total liability in the event a serious illness occurs. By restoring patients' financial participation in the program, the reduction in the purchase of supplementary insurance coverage would increase the cost-consciousness of both patients and their physician agents.

The proposed income-related ceiling is consistent with the basic principles of a social insurance program. Beneficiaries will continue to be eligible for coverage under a universal rule. Covered medical services will remain uniform for every eligible person. Neither eligibility nor covered services would be income-tested. While the expected value of benefits would vary according to family income under our scheme, that is wholly consistent with social insurance principles as well. Social insurance differs from private insurance because of its redistributive effects. Private insurance emphasizes individual equity while social insurance stresses social equity. Under the largest social insurance program, the social security cash benefit program, there is a considerable redistribution of income from high-income to low-income individuals. This is because the formula for determining the cash benefits weighs lower wages more heavily than higher wages.

Under the current HI program, all employed persons pay the same tax rate on their wages (up to a specified ceiling). Consequently, persons with high lifetime average wages have paid much more in taxes than those with low wages, yet all medicare beneficiaries are eligible to receive the same benefits. As a result, there is already a redistributive effect embedded in the current HI financing and benefit structure. Our proposed plan would increase the redistributive effects, but without altering the basic nature of a social insurance program.

When costsharing is related to income and to the prices charged by providers, some administrative mechanism must be devised to obtain income information and to identify program and beneficiary liability by classifying providers. These administrative procedures will, admittedly, complicate the administration of the medicare program. In this era of computerization, however, it is feasible to design a cost-effective system to administer our proposed plan. For example, income determination could be based on a simplified income statement which would include data on earned income, social security benefits, pensions, and unearned incomes. But these income statements would not have to be filed unless the beneficiary has exceeded (or expects to exceed) the ceiling for cost sharing. According to data from the Congressional Budget Office, [14] less than 10 percent of all beneficiaries would exceed the ceiling.

Critics of our proposal may argue that now medicare reimburse hospitals based on standardized regional DRG rates which defines the liabilities of the program. The DRG reimbursement system is also likely to promote efficiency in hospitals. Therefore, there is no need for establishing variable coinsurance rates for hospital services. We see it differently, however.

The DRG reimbursement system which partially closes the open checkbook provided to hospitals before, still allows hospitals to directly pass through their capital expenses, teaching and research costs. As shown in table 1, the DRG reimbursement rates in New Jersey can vary by 100 percert, mostly because of direct passthroughs. Moreover, the DRG reimbursement system, a national program, is broad gaged. It tries to provide incentives for the average hospitals, but the system can't deal effectively with local variations. Variable coinsurance rates would supplement the DRG regulatory strategy by reducing the patient's demand on the higher cost hospitals. They would, therefore, have greater incentives to economize. In addition, any reduced demand on the high-cost teaching hospitals would lessen the pressure on hospitals to become teaching facilities because of the higher reimbursement rates and greater prestige. Meanwhile, any shift in demand away from higher cost hospitals would also yield Federal savings.

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[14] Congress of the United States, Congressional Budget Office, Changing the Structure of Medicare Benefits: Issues and Options (March 1983), p. 51.

The determination of the price categories into which each provider belongs would also be relatively straightforward, given that price data are already being collected from providers by the Federal Government. Providers would be notified in advance into which cost category they had been classified. As a result, the providers' billing systems can readily determine which part of the bill will be reimbursed by medicare and which part should be paid by the patient. Patients would be provided with the price category to which a provider belongs and thus know in advance the financial consequences of their choices (i.e., the percentage of charges for which they will be liable). When a beneficiary's direct payments have exceeded his maximum liability ceiling, the Government can issue a card to the patient indicating that, thereafter, the provider can bill medicare directly for all subsequent allowed charges,

By providing full insurance for catastrophic illnesses, the medical resources spent and technology employed for them may increase. More patients would be hospitalized and given treatments that have questionable marginal benefits to patients. These serious potential side effects of fully insuring catastrophic illnesses have to be addressed through regulations and peer review. But since approximately 80 percent of the medicare beneficiaries have supplementary coverages now through medigap or medicaid (most of them provide comprehensive coverage) our proposed plan is unlikely to increase significantly the present wasted resources spent for catastrophic illnesses.

In summary, our proposal would retain deductibles and coinsurance for both HI and SMI benefits, but they would be structured in a different way than under the current program. We would maintain the high deductible for inpatient hospital stays, to provide a financial deterrent for unnecessary hospitalization. We would also retain the deductible for SMI, to minimize the administrative costs associated with paying large numbers of small claims for outpatient services. Finally, we would retain the coinsurance requirements of the current program but would restructure them significantly. Rather than establishing uniform rates that patients could continue to pay without limit, we would establish rates that varied by provider cost category and set limits on the total amounts for which patients are responsible. This would serve the dual purpose of creating incentives for patients and physicians to be more cost-conscious and removing the risk of financial ruin.

Who Gains and Who Loses

Our proposed plan would directly affect medicare beneficiaries as well as the Federal and State Governments, and it will indirectly affect hospitals, skilled nursing facilities, physicians, and taxpayers. The changes in the benefit structure would shift the cost burden among beneficiaries, and between taxpayers and beneficiaries. Also, the restructuring of benefits would influence the demand for services among providers and the rate of inflation in medical care costs.

The proposed plan would result in reduction of Federal outlays for medicare. A preliminary estimation of the Federal savings is presented below.

TABLE 3.—PRELIMINARY ESTIMATES OF REDUCTIONS IN FEDERAL OUTLAYS FROM THE PROPOSED PLAN

[In billions of dollars]

	1985	1986	1987
Hospital coinsurance change	$2.3	$2.6	$2.8
SMI deductible increase	0.5	0.8	1.1
SMI coinsurance change	1.3	1.6	1.9
Ceiling on total cost-sharing	−2.1	−2.4	−2.7
Total	2.0	2.6	3.1

Source: These estimates are based on the figures published by the Congress of the United States. Congressional Budget Office, Changing the Structure of Medicare Benefits: Issues and Options. (March 1983). Authors extrapolated the CBO estimates to the benefit provisions included in our proposed plan.

It is important to note that these estimates assume no behavioral changes by the beneficiaries in demanding medical services nor changes by providers to operate more efficiently. These figures only represent the shift in medical costs between the Federal Government and other payors. In other words, these estimates understate the potential Federal savings and overstate the additional costs to beneficiaries, because the effeciency gains that may result from the restructuring of benefits are excluded from these estimates.

In the long run, we would expect behavioral changes by beneficiaries in demanding medical services, and we would expect some providers to respond to competition by controlling their production costs or accepting a lower income. The savings resulting from these behavioral changes will take time to achieve and their magnitude is uncertain. We therefore do not wish to provide unreliable estimates of these potential savings. Nevertheless, we think it is plausible that the long-run savings in outlays for medical care because of the restructuring of medicare benefits could largely offset the increases in cost-sharing that beneficiaries would have to pay in the near term.

The reductions in annual Federal outlays (shown in table 3) will in large part be assumed by medicare beneficiaries (States will pay a small part through the medicaid program). The increases for beneficiaries, on average, will amount to approximately $80 per person in fiscal year 1985, $100 in 1986, and $120 in 1987. These financial burdens, however, will not be shared equally by all beneficiaries. Those with large medical expenditures would actually pay less than those average figures, and those with small medical expenditures would pay more.

Beneficiaries with high expenditures will pay less under our plan because it provides protection against catastrophic medical expenses. The estimated cost of this coverage is also shown in table 3. The cost of this income-related catastrophic protection plan will offset a large portion of the Federal savings produced by raising coinsurance on hospitalization and physician services. The 7 to 10 percent of beneficiaries whose medical expenditures exceed the ceiling will benefit from this coverage. Their out-of-pocket medical payments will decrease significantly. Meanwhile, those beneficiaries who have short stays in hospitals will pay more because of the imposition of 10 percent coinsurance. Those patients who use physician services will pay slightly more because their deductible would be raised from $75 to $100, and the coinsurance rate would be increased from 20 percent to 25 percent.

There is another redistributive effect in addition to the income transfer between beneficiaries who incur large medical expenses and those who incur small amounts. Our proposed income-related ceiling on patients' liability would benefit low-income beneficiaries much more than those with high income. Table 4 presents the distribution of the aged population according to family income. Currently, those with incomes $5,000 or less are likely to be covered by medicaid as well as medicare. They would continue to have dual coverage under our proposed plan and would thus not be affected. Those with incomes between $5,000 and $10,000 would have a ceiling on direct payments of $1,000, which would increase to $4,000 for those with family incomes of $24,000 or more. Beneficiaries with incomes greater than $24,000 are likely to benefit little from the ceiling, since, according to Congressional Budget Office estimates, less than 3 percent of the aged population will have out-of-pocket expenses that exceed $4,000.

TABLE 4.—DISTRIBUTION OF FAMILY INCOME AMONG NONINSTITUTIONALIZED ELDERLY

[1984 dollars]

Family income category	Percentage of beneficiaries
$5,000 or less	12.6
$5,001 to $10,000	22.0
$10,001 to $15,000	19.4
$15,001 to $20,000	11.9
$20,001 to $30,000	14.7
$30,001 to and above	19.4

Source: Congress of the United States, Congressional Budget Office, "Changing the Structure of Medicare Benefits: Issues and Options" (March 1983) p. 22.

All medicare beneficiaries, however, will be protected from medical expenses that are catastrophic in relation to their ability to pay them. Even those beneficiaries who do not incur large medical expenses would have peace of mind and assurance that if they were to develop a serious illness, they would not face serious financial hardship.

The gains and losses among medical providers will also be uneven. In the long run, the hospitals with high costs are likely to lose patients, and those with low costs are likely to gain patients. The same shift in demand is likely to occur among physicians. Those physicians with high charges, on average, are likely to lose some patients, while those physicians who charge less than the average price in a given service area would gain patients. These shifts in demand would result from the variable coinsurance rates incorporated in our proposed plan.

Conclusion

Cost-sharing represents a mechanism to serve two purposes: deterring excessive utilization of medical services and providing incentives for patients and physicians to use resources more appropriately, and reducing an insurance program's outlays. These justifications were among several that underlay the current medicare cost-sharing provisions and for our proposed plan. Current medicare law includes uniform flat-rate deductibles and coinsurance for both inpatient and outpatient services.

We believe that the existing provisions are seriously flawed. As medicare is currently structured, there is little incentive, or basis, for most patients and physicians to shop around for lower cost providers or to evaluate the need for proposed treatment procedures. Yet, in the event of serious illness, beneficiaries have no protection against financial ruin, because there is no limit on what patients may have to pay directly.

We developed a set of proposed modifications of medicare benefit structure. As in the current system, we would retain deductibles for hospital care and outpatient services, to deter unnecessary hospitalization and to reduce administrative costs. We would also retain coinsurance, but would restructure both the rates and the timing. Coinsurance rates would be linked directly to actual provider charges with higher rates associated with higher cost providers. Coinsurance would be required for all services used, including hospital care. However, the total amount of cost-sharing paid by each beneficiary would be limited to a maximum amount that is related to family income. This represents a significant departure from the current system. Finally, a key component of our propped plan involves the dissemination of comparative provider charge (price) information that is not currently available to patients, nor physicians.

Our proposed modification of the medicare benefit structure address what we consider to be the major design flaws of the current system. At the same time, we believe it should be considered as one approach to reducing the anticipated deficit in the medicare trust funds. Is should be viewed, however, as one component of a multifacted solution to solve medicare's financial problems. We have estimated that our proposed plan for benefit restructuring will result in savings of $3.1 billion in 1987; while substantial, these savings by themselves will not offset program deficits in the long term. In addition, however, we would not advocate, as a matter of principle, that beneficiaries should assume sole responsibility for restoring medicare's financial health. That responsibility is one that should be shared by beneficiaries, providers, and taxpayers—future beneficiaries—alike.

A MEDICARE VOUCHER SYSTEM: WHAT CAN IT OFFER?

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I. INTRODUCTION AND OVERVIEW OF ISSUES

The* Congressional Budget Office has produced a vivid and inescapable analysis of the prospects for the medicare hospital insurance Trust Fund. The fundamental causes of future shortfalls are logically discussed, as well as the necessary size of some alternative corrective measures such as increased consumer cost sharing, decreased payment levels to hospitals, and increased taxes. That analysis, together with other CBO reports and the published articles by Paul Ginsburg, are a most auspicious beginning for informed policy debate while there is still time for gradual solutions.

We leave to other authors the possibility of higher taxes. For methods not dependent on tax increases, the general economic problem is to control and reduce projected Federal outlays with the least decline in the expected welfare of beneficiaries. This leads to a consideration of inefficiencies under the present system involving (a) consumption of health care and (b) the supplementation of medicare with private insurance (65 percent of eligibles have supplementary coverage), and (c) medicaid.

There is general agreement that two leading devices for discouraging inefficient use of resources, and hence total cost shared by the Government and beneficiaries, are a higher consumer coinsurance for low- to moderate-sized changes and contracting with a group of providers who are "at risk" for the total cost of care delivered. There is still uncertainty in some minds about the effectiveness of provider financial incentives, and we shall have occasion below to briefly discuss that issue.

These two approaches to more efficient consumption can be encouraged side-by-side in a voucher system, allowing people to opt for alternative health plans [AHP's] and to share in any savings of total cost. There are also other advantages of a voucher system that will be emphasized. Our purpose of this paper is to discuss systematically and, where possible, quantify the likely effects of a voucher system depending on its particular design elements.

In this introductory section we specify a prototype replacement (mandatory) voucher system that is a logical beginning for surveying critical issues and likely consequences. The issues become more complex in a voluntary system that preserves the option of current medicare entitlements. The second section of the paper analyzes in some detail the possible net gain from eliminating the medigap market by means of a voucher system, even if this does not increase enrollment in cost-conscious AHP's. Such gains are more confidently expected in a mandatory system, but not altogether foregone in a voluntary system. We also develop the argument that some important benefits or options, for example, in long-term care, that are rarely supplied at present would become more practical to supply in a voucher system. Finally, we discuss implications for medicaid expense of medicare vouchers and opportunities for efficient reforms in medicaid for the elderly.

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The third section deals with the expected consumer choices of plans in a voucher system, with special attention to (a) new evidence on the market appeal (to the elderly) of HMO-type plans, and (b) the extent and consequences of adverse selection, in a voluntary system, for the option of current entitlements. The concluding section summarizes issues concerning implementation of a voucher system, together with our reasons for favoring a substantial role for vouchers in the control of the Government's budget for medicare.

A. Prototype mandatory voucher system

There are several reasons to begin discussion for vouchers with specification of a full replacement system of health insurance for the elderly. In this discussion, we presume that beneficiaries of the end-stage renal disease program and those who are institutionalized when they become eligible will be served by a continuation of current programs. Each medicare eligible, with the above exceptions, would receive a voucher for a fixed sum of money to be applied to the purchase of an approved health insurance plan. This system assures that the cost of medicare to the Federal Government is predictable and controllable. Voucher values can be permitted to grow over time at some rate such as the rate of growth of trust fund income, or some price index.

The mandatory system, in contrast to current medicare or voluntary vouchers would no longer implicitly subsidize the purchase of medigap supplementary policies. The importance of this point was first noted by Ginsburg (1982); namely, that with voluntary vouchers some people will find it attractive to retain current medicare entitlements with supplementary coverage that is implicitly subsidized—to a degree that we quantify later in the paper. The mandatory system assures that the people who select a plan with very low deductibles and coinsurance have paid the full marginal premium cost of these benefits compared to a lower benefit plan. This would tend to reduce the observed demand for such benefit levels, which themselves induce higher total utilization and current medicare expenses. Evidence on this point has been obtained in our own research below.

In addition to the above problem, current medigap policies, except for those covering people who continue to have employment-related group eligibility, tend to have high loading costs of selling, screening, and administration built into their premiums. It is likely that the voucher system would reduce these costs by offering access to large groups of eligibles on a periodic open enrollment basis. The mandatory system, by eliminating medigap policies, would be more effective than voluntary vouchers in reducing loading costs.

Also, since the mandatory system eliminates the default option of current entitlements, it eliminates the possibility that people overestimate the value of current medicare coverage, particularly in the areas of long-term care and physician services. Recent Government brochures suggest that home health care is completely covered, and they give little information about how well the medicare part B definitions of reasonable charges will approximate the market prices of physicians (e.g., U.S. HCFA, 1981). Indeed, our research involving extensive interviews with medicare beneficiaries reveals that many are likely to overestimate medicare coverage for custodial care. We suspect, based on this research that because many people are more willing to trust the Federal Government than a private insurer, they therefore pay less attention to exclusions or limits in current medicare.

Other major elements of a voucher system include the determination of voucher values, the offering of cash rebates for less expensive plans, and minium benefit requirements. A voucher system might determine voucher values on the basis of regional, national, or mixed averages of past medicare expenses. The current program of entitlements supports widely varying average dollar benefits due to regional price and utilization differences, as shown in some detail by Davis and Schoen (1978). While some regional variation could be justified on the grounds that wages (and therefore, contributions to the trust funds) vary in some correlation with medical care prices, the result can only be a crude approximation of equity in Federal benefit distribution. Under a mandatory voucher system, more precise targets of equity could be attempted; for example, vouchers need not fully incorporate variations in the intensity or style of medical care. By contrast, a voluntary voucher system must price vouchers regionally or else it will encourage AHP enrollment where medical prices are low and discourage them where prices are high—a quite perverse result.

The issue of whether to permit cash rebates for choice of plans with premiums below the voucher value arises in any voucher system. This is directly related to the issue of minimum benefits, since low benefits would generally be necessary to produce cash rebates. The availability of cash rebates in the prototype plan would seem to promote low benefit plans especially for people with relatively low cash income. Yet these are the same individuals who would quickly become entitled to medicaid if they had significant medical expenses. It might therefore be tempting to legislate minimum levels of coverage. However, this might unduly restrict the design of innovative plans. An alternative approach would simply be to require a catastrophic coverage provision; for example, a stop-loss at $2,500, indexed to medical prices. One could still design a plan under this circumstance, however, that would have many exclusions and limitations on what expenditures would be eligible to apply to the out-of-pocket expense limit; for example, hospital room and board expenses above a $300-daily limit. We should therefore recommend that all AHP's be severely limited in what expenses could be excluded for calculation of catastrophic loss. An exception for HMO's seems proper, to exclude all covered services purchased from out-of-plan providers. This approach to minimum benefits should provide substantial flexibility for AHP's yet protect against problems of extreme misinterpretation or misrepresentation of policies, and partially address problems of low-income people purchasing minimal plans (more on the latter issue below). This approach should also permit a lesser investment in information by eligibles than would otherwise be prudent, and should reduce suspicion about plans offered at lower prices.

B. Precedents for the voucher approach

The designers of our current medicare program attempted to secure for retirees the same type of health insurance prevalent in the market for large employment-related groups. This approach is defensible for several reasons. The Government was proposing to tax people in their working years in order to supply them with a group policy in retirement that could not be purchased on such favorable terms by an individual retiree. Therefore, the revealed preference of large nonelderly groups was a useful approximation to consumer desires. Moreover, to depart from established patterns in third-party reimbursement could distort the relative supply of services to the elderly and nonelderly. The elderly were not to be treated as second-class patients.

A remarkable fact is that in 1960, 5 years before passage of medicare, the Federal Government had already initiated a voucher-type system of health insurance for Federal employees. This plan covers a group nearly half as large as the number of retired medicare beneficiaries. Why the FEHBP was not considered as a candidate model for medicare is something of a mystery. Since then, experience with individual choice within employment groups has grown to include roughly one-third of the population under 65, while being promoted by Federal legislation on HMO offerings. It would not now be correct to say that a voucher system would subject the elderly to being the "guinea pigs" of social policy.

Enthoven (1980) briefly describes the relative simplicity of the Federal role in FEHBP compared to medicare. The FEHBP has a periodic open enrollment season allowing people to switch between plans. It does not permit health screening and differential prices based on age and risk classification. Nor does it permit temporary exclusions of coverage for preexisting conditions. Neither of these types of devices, which are observed in the market for individual health insurance, have been necessary to the survival of "high-benefit" plans which are reported to retain 80 percent of total enrollment in the FEHBP (Meyer, 1981). Hsiao (1978) compared the costs of administration for the FEHBP and medicare in 1971 and 1972. The cost per claim processed was estimated to be more than 25 percent higher for medicare than for the FEHBP. The medicare program was especially higher in the functional areas of claims review and auditing, which Hsiao attributes to higher Government wages and complexity of medicare cost containment regulations.

In the private health insurance market today, there are important new types of contracts and self-insured employer plans. In addition to the group practice HMO's, there are newer plans which restrict choice of referrals to specialists and hospitals more than they restrict choice of primary care physician, or they may share the risk of profit and loss with primary care physicians who serve as gatekeepers, or they may apply indemnity limits to the coverage of some high-priced hospitals or physicians, and so forth. These are approaches that have plausible cost containment incentives and appear to be easier for private firms to undertake than for the Federal Government which may be more vulnerable to complaints from well-organized providers about due process, discrimination, and interfering in the practice of medicine.

In areas such as higher education and housing, the Federal Government has found advantages in voucher-type systems rather than direct service supply or vendor payments. The housing allowance experiments (1970 HUD Act, title V, sec. 504) provide some recent experience relevant to a medicare voucher program. The basic experiment provided a cash payment to eligible families, living in units of minimum standard quality, equal to the reasonable market price of housing in excess of 25 percent of the family's income. Note that such a formula, taking into account family size and income, is analogous to an individually risk-rated voucher for health insurance.

One of the interesting results of the experiments reviewed by Aaron (1981) is that the incurred resource cost per $100 of market value of additional housing consumed was only about $110 in the voucher program compared to $200 for low-rent public housing projects. It is believed that this difference is primarily due to the Davis-Bacon Act requirements for paying union scale rates of pay in federally supported construction projects. This is an example of the kind of constraint that can make a public enterprise more costly that competitive private suppliers. No precise analogy to medicare is intended, only reinforcement of the general point argued by Milton Friedman (1956) that the organized political representation of vendors is likely to be stronger than consumers or taxpayers, affecting the design of programs and rates of pay.

The housing allowances were vouchers with a "cash rebate" feature. In variants of the experiment where payment was not tied to minimum quality standards, two-thirds of recipients stayed in substandard housing and spent the money in other ways. Overall, Aaron reports that only from 9 to 27 percent of allowances went for spending on housing that would not have occurred otherwise. Moreover, the higher that quality standards were set, the lower the participation rate by the lowest income families. These findings bear on analogous concerns for medicare: (a) a cash rebate feature in medicare vouchers could be an undesirably strong influence on lower income persons to buy the lowest priced option and become candidates for other subsidized care in the event of large medical needs, and (b) that as AHP benefit standards—and hence premiums—in a voluntary voucher system are set higher, the eligibles with lower income would become more likely to remain with the current coverage. The answer to these concerns, in addition to minimum catastrophic coverage requirements, appears to be some sort of income-related premium subsidy which could replace some of existing medicaid expenses for the elderly.

The housing voucher program also sheds some light on the likely administrative costs of a medicare voucher program. Overall, 23 percent of program cost went for administration. While this seems fairly high, when compared to the 10-percent figure believed to apply to income transfer programs in general (Aaron, op. cit.), it is important to realize that it includes major recruitment efforts, consumer advisory programs for finding and upgrading housing, and periodic reinspection and recertification of housing units. If the consumer recruitment and assistance programs are retained in the costs but the reinspection and recertification costs are eliminated, thereby better approximating costs of a health insurance voucher program, the administrative costs were only 12 percent of total program cost—using data reported in Zais, 1981. This is more comparable to other income transfer programs, and to the total administrative costs of FEHBP.

C. Loss of the medicare monopsony power

Since medicare pays for about one-third of all admissions to short-stay hospitals, few hospitals can refuse to accept medicare's definition of the allowable cost, or DRG price, it will pay for covered persons. In addition, a hospital cannot make any additional charge to the beneficiary for covered services. The extent to which medicare has exploited potential monopsony power to date is debatable, but this is becoming more of a reality with DGR's.

Actuarial consultants to DHHS have estimated that commercial insurers pay charges 25 percent higher than medicare, corresponding to a medicare "discount" of 20 percent similar to Ginsburg's (1983) estimate. In some States, Blue Cross plans have contracts with payment rates comparable to medicare, particularly in the Northeast and North Central States where the Blue Cross market share is large. An interesting question is why commercial insurers can still compete with Blue Cross plans despite the discounts won by the latter. Medicare is only beginning to attack large differences in allowable cost between hospitals and growth from year to year that is substantially in excess of general price inflation. This is a very restrained monopsony. Also, medicare and Blue Cross can make credible claims that part of their discount simply recognizes savings to the hospital in administrative cost, working capital costs, and bad debts. Of course, some other insurers with smaller market shares would like to have an opportunity to argue their case on the same criteria.

In a voucher system, unless elderly consumers are concentrated in a small number of plans, their insurers could probably not get as low a price from hospitals across the board. This disadvantage may be offset for those consumers choosing "preferred provider plans." However, a cautionary note is that our evidence to be given in section III suggests that consumers are generally unwilling to have their choice of hospital very narrowly restricted despite meaningful assumed savings in premiums. Instead, many elderly buyers are interested in saving money with plans restricting choice of physician. If such plans reduce utilization of hospital care as much as the literature suggests, the purely financial net consequences of vouchers for many elderly may be positive.[1]

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[1] We should not expect choice of traditional plans with higher cost sharing to reduce demand for care so much that consumer payments go down.

One possible approach to retaining monopsony power for the elderly is to restrict the number of AHP's. This, however, is not congenial to the virtues of freedom of entry for AHP's offering new benefits—specific examples will follow in section II. An alternative is for the Government to require that participating insurers be charged by hospitals at the lowest price charged any private carrier. This would not attempt to preserve special treatment for the elderly, but would at least preserve for them the bargaining power of the largest purchaser. Such a regulation involves a value judgment about appropriate cross-subsidy among hospital users, and whether any monopsony advantages are ever "fair".

Looking to the near future, one scenario is that the Federal Government might decide to reduce its real expenses by more severely reducing payment levels within the DRG framework. While this would leave elderly beneficiaries financially unaffected, service reductions should be anticipated. Why should a hospital continue to drive away its most profitable patients with higher prices or cut services to all patients because one payer class is lowering the price it will accept? And there is no way to prevent cuts in service to the elderly from going past the point that many would be getting less care than they would be willing to buy with extra direct payment. Currently physicians can collect these extra sums, as they are allowed to charge above the medicare limits. We are not arguing against the wisdom of provoking such a substitution of ambulatory for inpatient services, but it seems to us that this approach allows insufficient safety valves for high cost hospitals or high cost treatments that are valued by consumers.

D. Selection bias within a mandatory system

We cannot yet anticipate very accurately what types of plans would be offered in a voucher system or what kind of equilibrium could be established. There is a theoretical possibility that "high-benefit" plans could not survive despite the willingness of many people to pay the actuarial cost to insure themselves with such a plan. This conceivable problem, demonstrated in Rothschild and Stiglitz (1976), results from low-risk people being attracted away to low-benefit plans, raising the premium for high benefit plans until even the high-risk people are not willing to pay the price of the high-benefit plan. But when the high-risk people have moved down to the low-benefit plan, everyone is worse off.[2]

How serious a problem is the consequence of self-selection likely to be. This is a priority research issue, as emphasized in the major literature review of Pauly and Langwell (1982). There are grounds for doubting that the practical problem is very large. High-benefit plans persist in the individual health insurance market and as options within employment-related groups.[3] The problem is also not pronounced in or research with medicare beneficiaries (see below).

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[2] In public discussions, the problem of adverse selection is sometimes misunderstood as an equity problem, namely that individual choice of insurance will reduce the amount by which low-risk people subsidize high-risk people. This type of equity problem can be addressed by raising the voucher values for "deserving" people, by income transfer programs, or means-tested premium subsidy.

[3] Some observers note that employers are dropping former full-coverage health insurance plans, but this is believed to be due simply to the rapid growth of premiums independent of self-selection biases.

Some degree of differential pricing at the individual level for known health problems may be necessary to assure the viability of traditional high-benefit plans. It is noteworthy that for individual health insurance, State regulators allow people to be charged differential premiums by age and by other risk classification devices. The pricing differentials might be negotiated between the Government and the final candidate suppliers of insurance. Alternatively, the threat that traditional high-benefit plans would be infeasible might be welcomed by many observers as favoring AHP's with better incentives for physicians to control total cost.

Luft (1982) warns that if adverse self-selection is feared by HMO's—that is in the absence of differential risk pricing—even they may engage in several plausible strategies for attracting people with lower expected cost while discouraging others. He therefore recommends some uniform minimum standards on the scope of, and ready availability of, covered services in AHP's.

Within the FEHBP, the Blue Cross high-option plan still has a large plurality of enrollees. However, the cost has been dramatically diverging from the cost of prepaid HMO's within the FEHBP. Consider the spread between the cost of family coverage for Blue Cross and Kaiser of Southern California—a community-rated plan. In 1970, the monthly spread was −$6.03 (Kaiser was higher). By 1978, the spread was +$4.92, growing to $12.57 in 1982 and $21.42 in 1983.[4] Also consider HIP in New York which is experience-rated to Federal employees. In 1978, this plan was $14 per month less that Blue Cross for family coverage, growing to $28.60 less in 1982 and $39.63 in 1983. The growth of the "excess" cost of BCBS between 1978 and 1983, deflated by the CPI medical care component was 24 percent per year in the case of Kaiser, and 13 percent in the case of HIP. It may be the case that lower risk people are deserting the Blue Cross plan; but, in many parts of the country, these individuals would not have to resort to inferior financial protection as in the theoretical discussions of this problem. If some people want to preserve free choice of provider with full coverage of expense, and if this preference makes a plan such as the Blue Cross high option extremely expensive, the result can be viewed as an inescapable tradeoff (production frontier) between premium, coinsurance and restrictions on how different providers are covered—either significant coinsurance or restricted provider plans allow premiums to be kept near the fair value. This tradeoff seems to be one that is appropriately made by the individual consumer using a subjective calculus.

E. Special issues for a voluntary voucher system

Preserving the option of current service entitlements in a voluntary voucher program essentially guarantees that well-informed medicare eligibles suffer no decline in welfare as a result of a voucher system. This may be important for geographic areas where a relatively small elderly population would not permit meaningful diversity of options in a mandatory system. Also, a voluntary-voucher system can be gradually implemented as more and more

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[4] The one-year increase from 1982-83 is reportedly an unusual cumulative adjustment to declining reserves.

AHP's are admitted to the market. This process in fact is already underway.[5]

Drawbacks of the voluntary approach have already been noted above, such as the failure to eliminate the implicit subsidy of traditional medigap plans, and the high degree of regional indexing. Most fundamental, however, is the problem that the Government's total cost becomes directly sensitive to errors in the pricing of vouchers. If there is a favorable selection for an AHP and if Government voucher formula overestimate how much benefits would have otherwise been paid on behalf of those who opt for the AHP, then the total cost to the Government will rise. Ginsburg (1983) suggests that this could be a chronic problem because people who expect higher-than-average expenses will find it advantageous to stay with current medicare coverage and a subsidized medigap policy.

Empirical evidence concerning the possible extent of this problem is given in two major studies by Eggers (1980) and Eggers and Prihoda (1982). They analyzed selection bias for four medicare demonstrations of AHP enrollment. In three of the four cases, enrollees in the AHP previously had substantially lower medicare benefit payments than those of comparable medicare eligibles in the same geographic area. The Government's pricing formula, based on county, age, sex, institutional amd welfare status, was apparently 20–40 percent higher than justified by past experience of the enrollee group.

By contrast with Eggers and Prihoda, cost reports for these three AHP's suggest that each one was losing money on its at-risk medicare enrollment in 1980 and 1981, to the uniform extent of about 15 percent of revenue (Kahn and Leighton, 1983). The reasons for this conflict are not fully understood. The premiums necessary to cover unreimbursed cost may have been underestimated or purposely underpriced. However, it is surprising that the Kaiser plan with long experience with elderly enrollees, on a cost basis, would have suffered similar losses. One problem with the Eggers and Prihoda study is that they begin with a sample of people known to be alive in 1980 and proceed to look backward—hence the people who recently had died after using a great deal of service are omitted.

There is at least one conceivable strategy to preserve the option of existing service entitlements, while obtaining more of the effciencies of a mandatory system. As an AHP succeeds in enrolling medicare eligibles, the total revenue it receives—from the Government and the enrollee—is valuable information. If this total price, less the amount that the beneficiary would have paid out-of-pocket in the current program, is below what medicare would pay currently, then the Government can raise premiums or cost-sharing for the default option.[6] The argument is that if an AHP proves its relative efficiency, the Government can share in the savings indirectly by this method until nearly all eligibles are induced to join more efficient plans. The burden is on eligibles to pay the revealed higher cost of open entitlements if they remain with the default option.

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[5] In March 1982, over 630,000 medicare eligibles were enrolled in prepaid plans, although ⅚ of these were enrolled in plans paid by HCFA on the basis of cost reports.

[6] This strategy was suggested to the authors by Larry Manheim.

II. WELFARE GAINS IN THE PROTOTYPE SYSTEM

The Prototype voucher system assures the Federal Government's budget objectives. The savings and improved predictability/control of the budget are not necessarily matched by a decline in the welfare of medicare eligibles if vouchers serve to eliminate sizeable inefficiencies in health insurance coverage. This section considers two types of inefficiency that would be attacked by vouchers even if the people do not select HMO's shown to have lower total cost associated with changed provider incentives. Then we discuss how vouchers might be used to improve upon the current means-tested medicaid coverage for the elderly.

A. Elimination of the subsidy of medigap policies

Knowledge of the insurance coverage and expenses by source for the elderly has been enhanced by the National Medical Care Utilization and Expenditure Survey (NMCUES) of 1980. Tables from this source prepared by HCFA indicate that in 1980, some 65 percent of elderly, noninstitutionalized medicare beneficiaries held medigap policies with average annual benefit payments of $395. Medicare paid $988 per eligible person with medigap coverage, while paying only $729 per person for the 21 percent of eligibles with only medicare coverage. Total expense was $1,008 per person in the medicare-only group, compared to $1,818 for those with medigap policies.

If we suppose that the only difference between these two groups was the medigap coverage, then medicare was subsidizing the purchase of such coverage with $259 of extra benefits. Let B be the medigap benefit, π be the premium amd S be the extra medicare payment. Then π/B is the unsubsidized price of insurance; that is, the consumer price per dollar of expected benefit, while $\pi/(B+S)$ is the subsidized price. The rate of subsidy of medigap premiums can be seen to be $S/B+S$ which is a whopping 39 percent. Even if the loading of individual medigap premiums for administrative and sales cost is 50 percent, as indicated by the 1979 data presented in Carroll and Arnett (1981), the net price of $1 of benefits is now only 92 cents.

The initial calculations are possibly extreme, due to selection effects, even though medigap issuers are free to use medical screens and other restrictions. One indication of this extremity is that the 67 percent difference in total expense between the groups, associated with a 33 percent difference in net consumer cost-share, implies a price elasticity of demand for care of about 2.0 which seems too high. A more plausible price elasticity of about 1.25 can be estimated from the utilization differences reported by Link, Long and Settle (1980), who controlled for many demographic and other determinants of the utilization of care.[7] Using the lower demand elasticity, and interpolating both the B and S extreme values, we calculate a premium subsidy rate of 31 percent and a price. $\pi=(1.03)(B+S)$ which represents a very low, albeit positive, load factor for a medicare eligible with typical prospective needs for health care.

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[7] They found that the independent effect of medigap coverage on use of hospital days was =33 percent and for physician visits, about 40 percent. We used the higher figure overall to allow for the likely use of higher priced providers by people with medigap.

Under the prototype voucher system, each individual faces the full cost of the benefits paid by the plan selected. The loading of premiums would be less than the 50 percent of currrent medigap plans, but greater than the 3 percent subsidized rate calculated above. This should reduce the demand for policies that primarily extend current medicare by eliminating deductibles and coinsurance. The 31 percent rate of subsidy is not much less than the estimated rate of tax subsidy of employer contributions to health insurance. Phelps (1982) and Feldstein and Friedman (1977) have addressed the quantitative effects of that tax subsidy. The aggregate simulation by the latter authors[8] suggests that insurance benefits demanded are about 60 percent higher with the subsidy than without. Phelp's work suggests a somewhat higher conclusion. While the past research was for nonelderly populations, it helps to clarify the approximate size of the effect of the implicit subsidy of medigap policies.

Suppose, however, that the voucher system had no effect on the current combined coverage held by the 65 percent of eligibles with medigap. They might still be better off financially by reduction of the loading costs they are paying in their medigap premiums. Let V be the voucher value determined by current average medicare payment per enrollee. This was $1,005 in 1980 for the elderly in the NMCUES data. This is in fact higher than the $988 average payment for those with medigap, due to the much higher Government cost for people eligible for medicaid. The lower figure is used here to understate results. Then the financial impact on medigap holders is favorable or adverse depending on whether

$$1.5\,B \gtrless (1+m)\,B+(m-t)V$$

where m is the new load rate for all benefits, and t is the current loading rate for the purely insurance functions of medicare which we may assume to be rebated to consumers with vouchers. The value of t for 1980, averaging over all medicare benefits is approximately 4.1 percent. Then the net effect is favorable, provided that m is less than 17 percent. This may be attainable in view of the fact that the load factor on average for insurers in the Federal employee health benefit program is a bit less than 10 percent.

B. *New Coverage and Options.*

Access to a large group of elderly persons able to afford AHPs may permit the supply of plans that are not feasible in the medigap market. We will develop this argument with respect to coverage of long term care (LTC) and then with regard to newer IPA models for physician and hospital coverage.

In the medigap market we observe contracts to fill in the medicare part A copayment for care in participating skilled nursing facilities lasting up to 100 days. An extension of the period to 365 days, restricted again to skilled nursing care, is also available in many geographic areas. For more details based on our survey of LTC policy offerings, a working paper is available.[9] The narrow approach of medicare and medigap policies to LTC is a "recuperative" philosophy of defining LTC benefits in terms of skilled nursing procedures at home or in approved facilities. Yet, our research, to be reported in section III below, and the reports of others indicate unsatisfied demand for the custodial components of LTC, especially at home, and willingness to pay substantial amounts for such coverage.

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[8] Assuming "price elasticity" of demand for care near the levels found in the health insurance experiment.

One reason that the supply of insurance for the large custodial component of LTC is virtually nonexistent may be that the cost of claims administration—determining when a person qualifies and the least cost regimen of care—may be high and have a large fixed component independent of the number of policies sold. Moreover, the potential adverse selection may dictate high costs of personal selling and screening under present arrangements.[10] The voucher system, by providing access to a large pool of persons at age 65, which is still young in regard to the use of LTC, would permit insurers to realize major economies of scale in spreading out the types of costs inherent in expanded LTC definitions.

A somewhat similar scale argument applies to offering of new types of cost-conscious plans. An insurer might undertake to enlist only those physicians who will accept stringent utilization review which is, itself, costly to set up. Or an insurer might develop an acceptable risk-sharing arrangement with primary care physicians for the costs of specialist referrals and hospitalizations. Such models are indeed emerging in private group health insurance. It is hard to imagine how such models could be offered in a medigap product. But some AHP's have been newly created within the past year in response to an invitation by HCFA for demonstration sites to enroll medicare eligibles. In short order, two dozen sponsors of AHP's, most of which are not group practice HMO's, were approved to enroll beneficiaries using a fixed formula of actuarially determined prices with unregulated profit or loss. This observation is encouraging about the prospects for more efficient plans that could be offered in a voucher system at attractive prices because of economies of scale.

C. Coordination and restructuring of medicaid

In 1982, about 7.5 percent of the elderly qualified for cash assistance on the basis of State and Federal income criteria and were automatically eligible for medicaid coverage that nearly completely eliminates their out-of-pocket cost for covered services. Another 5.5 percent of the elderly were eligible for medicaid because of large expenses after spending-down their income and assets. For 80+percent of these eligibles, State governments spent $12.20 per person-month to pay the medicare part B premium. This can be a bargain for States wishing to provide generously for health care of the elderly; States save the Federal share of the expected cost of the covered part B services. Moreover, the elimination of consumer cost undoubtedly contributes to the NMCUES finding that medicare in 1980 spent $1,800 per person on noninstitutionalized elderly covered by medicaid, compared to $1,005 per elderly person overall. Beyond those expenses, in fiscal 1982 medicaid programs spent $10.9 billion in vendor payments for 3.2 million elderly recipients of services. These are large commitments that would plausibly affect the behavior of the elderly with regard to the use of vouchers.

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[9] B. Friedman, "Private Insurance for Long Term Care, "CHSPR working paper No. 90, 1982. A shortened version is published in Journal of the American Health Care Association, September 1982.

[10] Also, the restricted potential dollar volume per enrollee in the medigap market may not offer much incentive for consumer research and experimentation with new policy designs.

It is important to bear in mind the profile of elderly recipients and expenses by eligibility status. Table 1 below indicates that 58 percent of the recipients were those receiving cash assistance because of low income levels; but because their expenses are relatively smaller, they account for only 25 percent of expenses. The second group is categorically eligible but not receiving cash assistance, typically because they are residing in a long-term care institution. The third group contains those whose expenses have been so large relative to their incomes that they qualify for assistance in those States that choose to include them. Over time, total recipients have been declining in the cash recipient group but rising in the other groups.

Table 2 shows that the pattern of expense by service category differs for the three eligibility groups. Expenses for the cash assistance group are relatively concentrated (19 percent) on hospital care as well as long term care (42 percent), while for the other groups, expenses are much more heavily concentrated on long-term care (87 and 78). If the Federal share (about 55 percent) of all this medicaid expense were distributed across all elderly people, it would amount to $256 per person, of which $184 per person represents the expense on long term care.

TABLE 1.—AGED RECIPIENTS OF MEDICAID, DETAILED BREAKDOWN BY BASIS OF ELIGIBILITY, FISCAL YEAR 1982

	Recipients (thousands)	Payments (millions)	Payment per recipient
Cash recipient	1,867	$2,741	$1,469
Eligible, no grant	627	3,530	5,630
Medically needy	747	4,582	6,134
Total	3,241	10,853	3,350

TABLE 2.—PROPORTION OF TOTAL PAYMENTS FOR THE AGED SPENT ON SELECTED SERVICES, BY BASIS OF ELIGIBILITY

Service	Cash recipients		No grant		Medically needy	
	1975	1982	1975	1982	1975	1982
Hospital inpatient	.10	.19	.04	.02	.03	.10
ICF	.32	.28	.41	.58	.25	.29
SNF	.24	.14	.43	.29	.59	.49
Physicians	.07	.06	.02	.01	.01	.01
Hospital outpatient	.01	.02	.00	.00	.00	.00
Drugs	.14	.12	.04	.05	.03	.03
Group total	.89	.81	.94	.95	.91	.92

Source: HCFT forms 2082, Office of Research.

Given the availability of this extensive assistance, (a) it is rational for the elderly who know they are eligible for assistance to keep to a minimum their expense on options within a medicare voucher system, (b) such persons will tend to pick plans with unrestricted choice of provider so long as medicaid has that feature, (c) people without sizeable assets to protect can rationally plan to rely on medicaid for long-term care. Another way of stating the last point about incentives is that the premium to increase coverage of long-term care in a private contract may be greatly in excess of the value of being able to buy somewhat more or better care than medicaid will provide for free. Friedman (1979) makes a similar argument regarding the effects of medicaid on inefficiently low demand for catastrophic insurance clauses by people without a great amount of assets to protect.

Based on those considerations, a corrective strategy in a voucher system is to cancel all automatic eligibility for medicaid for the elderly. Cash transfers can be increased permitting low-income elderly to afford plans with relatively comprehensive coverage. Then, any residual medicaid coverage would begin only after a much greater dollar loss out of pocket. Perhaps long-term care coverage should be especially encouraged—for example, reinsurance guarantees—in the voucher system to increase the purchase of coverage and cancel the effect of medicaid entitlements.

III. CONSUMER PREFERENCES IN A VOUCHER SYSTEM

Studies of and market experience with consumer decisionmaking about health plans can provide important information about several issues pertaining to the development and outcomes of a medicare voucher program. They can provide information about (a) the extent of beneficiary knowledge about health insurance and hence the extent of difficulty that beneficiaries may have in making decisions about alternative plans, (b) the effects of plan features on beneficiary preference, thus allowing plan designers to develop plans that are maximally satisfying to medicare beneficiaries, (c) the types of plans that medicare beneficiaries are likely to choose given that plan sponsors are well-informed about their preferences and that a variety of plans conforming to those preferences are in fact offered to beneficiaries, (d) the percentage of medicare beneficiaries likely to choose AHP's with cost-saving financial incentives, (e) the degree of favorable self-selection for AHP's that must be anticipated in the pricing of voluntary vouchers, and (f) the degree to which selection bias, especially in mandatory system, necessitates individually risk-rated vouchers. Previous studies of the choice of insurance plan, experience in the medigap market, the HCFA demonstrations, and our recent research with medicare beneficiaries provide relevant evidence.

Formal studies of consumer decisionmaking about HMO's versus traditional insurance plans among the nonelderly population provide information about the effects of plan features on choice and the relationship between consumer characteristics and selection of plans. As discussed below, however, the retrospective nature of these studies and the limited number of plans examined in a given study create such serious problems of inference that findings pertaining to the effects of plan attributes in those studies are seriously suspect. Luft's (1981) review of HMO studies provides interesting information, however, about the relationship between consumer characteristics and choice of HMO's. He notes that a common finding of these studies is that "people having good ongoing relationships with physicians are unlikely to sever those ties for moderate savings." This might imply that those joining HMO's would be individuals using fewer medical services since such individuals presumably have little need for ongoing relationships with physicians. This is also consistent with Luft's tentative conclusion from a few studies that people joining prepaid group practice HMO's were previously lower than average utilizers of hospital care under conventional coverage. However, he notes contrary evidence for people choosing the individual practice association HMO model.

As noted previously, the experience in the medigap market suggests that medicare beneficiaries would value low copayments and deductibles in a voucher program; however, as also noted above, this demand might not be present under a voucher system when purchasers of such plans have to pay their full cost. Experience with this market would also suggest that if individuals do purchase unrestricted provider plans with very low deductibles and copayments under a voucher system, they may be somewhat heavier utilizers of health care services. The final piece of information to be gained from experience in this market pertains to medicare beneficiary knowledge of health insurance. The necessity of the Baucus amendment of 1980 requiring certification of medigap policies is testimony to medicare beneficiaries inability to understand their medicare coverage in relationship to supplementary policies.

Some aspects of the HCFA demonstrations of HMO enrollment have already been noted, but useful experience is only beginning to accumulate with the recent addition of two dozen new AHP's under the HCFA competition demonstrations. The experience at the established HCFA demonstration sites suggests that significant numbers of medicare beneficiaries are willing to enroll in AHP's. At the present time 14 percent of medicare beneficiaries have enrolled in various types of HMO's in the Minneapolis-St. Paul area, although only 7 percent of medicare beneficiaries have enrolled at the other three established sites—this may be due to the greater variety of plans in the Minneapolis-St. Paul area, thus making it possible for more medicare beneficiaries to find a desirable alternative plan. The HCFA demonstrations also provide evidence concerning selection issues. As noted previously, three of four existing at-risk group practice HMO's may have obtained a somewhat favorable selection, however these findings are open to question. Finally, there is some suggestion from the study of enrollment practices in these demonstrations (Kahn and Leighton, 1983) that medicare beneficiaries solicited and enrolled by mail for the Kaiser plan in Portland may not have understood the provider restrictions present in that plan.

On balance, the existing research and experience does not provide sufficient information concerning the preferences of medicare beneficiaries for plan attributes under a voucher system. It also does not provide clear information about the extent of selection effects likely to occur under a voucher program. The experience with the medicare demonstrations does suggest that significant numbers of medicare beneficiaries would be willing to enroll in alternative plans; however, based on our research discussed below, we believe the potential to be far greater if plans are more carefully designed from the standpoint of the medicare beneficiary. The experience in the medigap market and the experience with the Kaiser demonstration plan point to potential problem for medicare beneficiaries faced with alternative plans. We believe this to be a serious problem and our own research addresses this point, but we do not see it as an insurmountable one as discussed on our section on implementation issues.

Our own recent work is discussed in some detail below because it is closely targeted to answer the questions for medicare, and it avoids the limitations of the retrospective studies of consumer choice previously conducted. We employ a prospective study methodology that is well established in the literatures of marketing and psychology, and becoming more favorably viewed by economists. Since our findings have just recently been assembled, we are supplying here a bit more detail on the methodology than would otherwise be needed. A thorough report and a discussion of the external validity of the methodology used in our research is available.[11]

A. Conceptual approach to study of beneficiary choices

We start with the assumption common to economic and psychological models of choice that a consumer attempts to select a combination of health plan attributes which has maximum utility for that individual. In those studies of HMO choice that have included plan attributes as determinants of choice, the treatment of attribute preferences has typically been superficial. For example, most studies simply list the percentages of persons expressing a particular concern about a plan or reason for choosing a plan based on some attribute. Rarely is information regarding the relative importance of a given attribute or concern assessed.[12]

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[11] LaTour, Friedman, and Hughes, "The Vouchering of Medicare: A Marketing Research Approach," Center for Health Services and Policy Research, Northwestern University, 1983.

Even more serious limitations of previous research methodologies are (1) the likely distortion in estimates of the determinants of consumer preferences due to use of a retrospective methodology, and (2) the small number of plans available in any one study for estimation of attribute effects. Asking respondents to explain their behavior after the fact has long been viewed as inappropriate by psychologists studying decision making. Memory error is heightened with the passage of time and there is also the serious problem of *ex post* rationalization (Miller and Baron, 1973, Osterhouse and Brock, 1970). The small number of plans in previous studies means that there is a serious confounding of attributes. For example, a closed panel HMO may differ from a traditional plan on numerous dimensions: price, deductible amount, copayment amount, restrictions on physicians, restrictions on hospitals, et cetera. Making an inference as to which attributes influence choice is impossible when the number cf attributes far outnumber the number of plans.[13]

A procedure that eliminates the problems of recall inaccuracy and retrospective distortion involves presenting individuals with a set of hypothetical health care plans. The respondent then rates the plans on an appropriate scale, such as preference or purchase intention. Evidence for the validity of prospective approaches has been provided by Silk and Urban (1978) and by Wright and Kriewall (1980). They show that such methods can predict actual choices of products and even complex services in the marketplace with a high degree of acccuracy. One of the few published examples of such a study in the health care context was conducted by Koutsopoulos, Meyer, and Henley (1977). This was not a study of health plan choice, however, but a study of physician choice.[14] They determined the impact of cost, travel time, and waiting time on preference for a hypothetical set of health care providers. The authors interpreted their data to show that all three factors combined muliplicatively to determine preference: the presence of just one undesirable feature substantially reduced the overall desirability of a plan.

One final point should be made with respect to purchase intention models. In general, concomitant variables—consumer characteristics—can be assumed to alter an individual's preference for various attributes. For example, it is supposed by many that higher income leads to reduced demand for low deductibles. The analysis of covariance procedures used in our research allow this type of hypothesis is tested by including interactions between consumer charcteristics and plan attributes.[15]

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[12] See for example, Scitovsky, McCall, and Benham (1978) for an example of a study in which it was found that a variety of attributes mattered to consumers but no attempt was made to determine relative importance.

[13] One example of a retrospective study that focused specifically on characteristics of alternative plans was conducted by Tessler and Mechanic (1975). The results suggested the following conclusions: physical distance and existence of an ongoing relationship with a physician were major deterrents to enrollment in a prepaid plan. Those who chose the prepaid plan indicated that comprehensiveness of coverage, desire for a continuing relationship with a physician, cost, quality of physicians, a family member's needing much medical attention, complete care in one location, and preventive practice were reasons for choice of the plan. As in all studies of HMO choice to date, the limited number of plans results in confounded variation of attributes. As a result, no formal modeling of consumer decisions using all the attributes identified by consumers would have been possible.

[14] Hershey, et al. (1983) have recently released a working paper which uses a similar methodology to study decisions of high income employed persons about traditional health insurance plans varying in price, deductible, coinsurance, maximum liability limits, and catastrophic limits. Since they do not focus on the elderly or include HMO plans in their set, we do not discuss their work here.

B. Likelihood of purchase of AHP's in a voucher program

In order to understand the decisionmaking of medicare beneficiaries, we have undertaken a two-phase empirical study. The first phase involved focus group interviews with beneficiaries to gain insight into their understanding of health insurance, their receptivity to a voucher system, and preliminary insight into their preferences for the features of health plans that might be available under a voucher system. This study then served as input to a quantitative phase in which a large number of plans were structured so that their attributes varied systematically according to experimental design criteria.

Focus group results.—Six group sessions, each with 6 to 9 randomly selected participants were conducted. Individuals were recruited with random digit dialing techniques, from urban, suburaban, and rural areas of Cook and Lake counties in Illinois. The majority of the participants had supplemental medigap coverage. Many of these individuals were unable to specify what was covered by their medigap policies and for those who did specify coverage there tended to be an overestimation of benefits. It was apparent from their comments that medicare beneficiaries, including well-educated ones, have difficulty in understanding current medicare and their supplementary policies.

Interest in a voucher system seemed to be higher among those groups with higher educational and income levels. They liked the idea that they would have more choices than under the current medicare program. Those with lower educational levels found the voucher concept harder to understand and were concerned that private insurance companies might take advantage of them and that they would have difficulty making choices among alternatives. Interest in plan features under a voucher program was probed, especially regarding health maintenance organizations, and long-term care coverage.[16]

Participants who had joined an HMO or had heard about the experiences of close friends or relatives were quite enthusiastic about them. However, many participants expressed concerns about some aspects of HMO's. Many were concerned that HMO's involved clinics in which one could not regularly see a competent physician. Another related concern was the fear that they would not be able to use their present physician. Many were also concerned about hospital restrictions. A significant number were sufficiently concerned, however, about their current physician retiring or dying that they expressed some interest in an HMO. There was also a surprising amount of mistrust and negative effect toward their physicians, suggesting that some individuals would be willing to switch anyway.

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[15] Juba and Lave (1979) explicitly hypothesize how individual characteristics such as education might modify the value attached to various plan attributes, and proceed to test for the size of the net effects on choice of a particular plan. Such a method is insightful, but it cannot provide direct information about preferences for packages of attributes beyond the two plans observed in their study.

[16] Most individuals were uninterested in coverage for dental care, routine eye care, routine foot care, and chiropractors. There was some interest in coverage of drugs on the part of those with lower incomes, but overall interest was not strong.

The overall impression obtained from these discussions of HMO's is that most medicare beneficiaries are unfamiliar with them but that the availability of extended coverage at a reasonable price and freedom from the task of claim filing is very appealing. Many have sufficient concerns, however, about lack of freedom of choice among providers, a clinic approach to care, possible incompetence of providers, and the possibility of financial insolvency that they would be reticent about joining an HMO were that offered under a voucher program. It is apparent that special promotional efforts would have to be undertaken by HMO's in order to provide information that would eliminate these concerns.

Interest in and concern about long-term care coverage was high. Participants were generally aware that nursing homes are very expensive and were concerned that they would be unable to afford nursing home care should that be needed. Most of the participants thought that nursing homes were institutions they wanted to avoid—their disparaging comments about nursing homes were quite graphic. If at all possible, they wanted to stay at home. Many participants expressed willingness to pay for coverage that would optionally provide home health or nursing home care, as appropriate, at a cost of $20 to $25 per month and a few were willing to pay $40 to $45 a month in premiums.

Quantitative survey design.—The second phase of the study involved a nationwide survey of 2,016 noninstitutionalized persons over age 65. Because of cost considerations, a national probability survey was not possible; instead, the Market Facts consumer mail panel was employed, matching the sample to census data with respect to education, income, and population density of residence area. Respondents were asked to indicate their likelihood of purchase of eight health care plans (or remaining with current medicare), using an 11-point scale ranging from "not at all interested in choosing," to "extremely likely to choose." Three sets of ratings were given, under three separate conditions: current medicare still available, current medicare unavailable, and current medicare unavailable with waiting periods invoked whenever people switch among plans. Only results for the first two conditions are reported here.

Four major attributes, physician restrictions, hospital restrictions, long-term care coverage, and availability of current medicare as an option, were varied within-subjects. This means that each respondent judges all possible combinations of these attributes.[17] The other plan attributes are manipulated between-subjects in order to reduce the number of plans that the respondents must judge. This means that each respondent is exposed to only one level of each of such variables. Attributes manipulated for both HMO and fee-for-service plans include extent of outpatient mental health coverage, plan sponsor, order of presentation of plans, and price.

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[17] The physician and hospital restrictions were not a simple 2 by 2 design. Hospital participation was either unrestricted, or limited to "a single major hospital in your area." Physician participation was either unrestricted, limited to a single group practice, or limited to a "list of physicans and group practices." The single group practice was only offered with hospital restriction, while the IPA-type plan was offered only without hospital restriction. For purposes of analysis, the two levels of physician restriction were combined. All physician-restricted plans had a zero deductible and zero coinsurance. All unrestricted physician plans had 20 percent coinsurance and a catastrophic stop-loss at $2,500.

Price was manipulated by taking the fair price for each plan—a function of benefit levels and provider restrictions—and pricing the plan $15 per month above or below that value. This allows an examination of price unaffected by its collinearity with plan benefit levels and provider restrictions. The base price for each plan started with the current $12.20-per-month subscriber cost for medicare part B. Further adjustments in plan costs were based on the following: premiums actually charged for current medigap policies; actuarial analyses submitted to DHHS by Coopers and Lybrand, Inc., and by Richard Mellman of Prudential Insurance Co.; written advice provided by the actuarial department of Blue Cross; estimates distributed by specialists in long-term care; experience with mental health coverage in the FEHBP; and analysis of out-of-pocket expenses of medicare beneficiaries from HCFA.

The remaining attributes manipulated between-subjects are nested variables. That is, some are varied only for restricted-physician plans and some are varied only for physician-unrestricted plans. Since beneficiaries might not be able to use their current provider under a physician-restricted plan, provider reputations for friendliness, waiting time, and quality of care were varied. Size of the deductible was manipulated only for physician-unrestricted plans: ($0, $300, or $800 combined deductible for physician and hospital services).

Expanded long-term-care coverage for homemaker/health aide services was priced at $15 per month based on the calculations made by Gruenberg (1981) in connection with the demonstration programs for the S/HMO concept. While Gruenberg's estimates were trended forward and then doubled, to allow for poorer cost control incentives when there is no gatekeeper agency, this premium plus the current medicare expense on skilled nursing facility coverage would not be quite enough to cover all ICF care of these elderly—we did not assume that all of current medicaid expense would be supplanted.

A cautionary note must be given here. Our survey does not include currently institutionalized people, perhaps 5 percent of the medicare population, a group who might have the highest expected expenses for covered services. The treatment of this special group in a voucher system will have quite critical effects for the cost to the Federal Government. This is only a problem in the short run if all current beneficiaries are included in the plan. If it is phased in with new groups of beneficiaries turning 65, it will be a much less serious problem.

Effects of plan attributes on purchase intention.—The survey data were analyzed using analysis of variance and analysis of covariance.[18] The factorial design employed in this study allows for estimation of the main effects of plan features, as well as their interactive effects with other features. When an interaction is found, this indicates that the effect of a variation in a given plan feature depends upon the level of some other feature. The systematic testing for interactions is a particularly valuable feature of our methodology.[19]

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[18] Because cell frequencies are unequal, the methods recommended by Appelbaum and Cramer (1974) were employed to test the statistical significance of the effects of the plan attributes manipulated between-subjects. Plan features manipulated within-subjects were analyzed using the methods recommended by LaTour and Miniard (1983).

All of the variables manipulated within-subjects have main effects upon purchase intention (tables 3, 4, and 5). Of the three, hospital restriction has the largest effect. Collapsing across levels of the other variables, the mean rating for unrestricted plans is 4.01 and for restricted plans is 2.28, a difference of 1.73 scale points (see table 3). Clearly, the average medicare beneficiary does not wish to purchase plans restricted to a single hospital even though this carries with it a $7-per-month reduction in plan cost. We may have underestimated the achievable savings with a restriction of hospital choice, but the $7 in marginal savings is not trivial in relation to other price variations. Respondents are much more positive about physician restrictions, however, with a slight preference for this feature. The difference in purchase intention between plans with and without physician restrictions averages 0.43 scale points (see table 4). This difference is of the same order of magnitude as the difference in preference due to a $30 between-subjects manipulation of price (see below) and is associated with an assumed savings of $22 per month reduction in plan cost due to restricted physician choices.

As suggested by the focus group research, the inclusion of extended long-term-care benefits—custodial care benefits in an institutional or home setting—also results in a statistically significant increase in likelihood of plan purchase of 0.42 scale point (table 5). This preference exists despite the fact that a plan with extended long-term-care benefits costs $15 more per month than a plan without such benefits.

Under a voluntary program, the default medicare option is strongly preferred on average relative to the alternative plans. The mean rating for medicare is 7.2 while the mean rating for the alternative plans under a voluntary system is 2.85. The mean rating for alternative plans increases to 3.44 under a mandatory system. This finding does not mean that some specific plans are not highly rated by the respondents or by specific groups of respondents. Indeed, a market share analysis (see below) reveals that if beneficiaries had available to them and were fully informed about all eight plans created by the variations in hospital restriction, physician restriction, and long-term-care benefits, medicare would only retain about 50 percent of the market for health plans.

The only nonnested between-subjects manipulation having a statistically significant main effect upon purchase intention is price (see table 6). The variation in price of $30 per month, more than half the premium of most plans, results in a difference of 0.37 scale points with lower priced plans being preferred.

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[19] Interactions beyond third order are unlikely to be interpretable and testing of so many model terms is likely to capitalize on chance given that there is no a priori reason to think that they would be statistically significant. We have therefore constrained the ANOVA model to terms of third order or less.

TABLE 3.—EFFECT OF HOSPITAL RESTRICTION ON PURCHASE INTENTION

Hospital choice unrestricted	4.01
Hospital choice restricted	2.28
Difference	1.73

$F(1{,}858) = 457,\ P < .001$

TABLE 4.—EFFECT OF PHYSICIAN RESTRICTION ON PURCHASE INTENTION

Physician choice unrestricted	2.93
Physician choice restricted	3.36
Difference	−.43

$F(1{,}858) = 35.6,\ P < .001$

TABLE 5.—EFFECT OF EXPANDED LONG-TERM CARE ON PURCHASE INTENTION

Current L.T.C. coverage	2.94
Expanded L.T.C. coverage	3.36
Difference	0.42

$F(1{,}858) = 35.5,\ P < .001$

TABLE 6.—EFFECT OF DIFFERENCE FROM FAIR PRICE ON PURCHASE INTENTION

Fair price less $15	3.33
Fair price plus $15	2.96
Difference	0.37

$F(1{,}858) = 9.53,\ P < .002$

It is important to point out that each of these variables is involved in significant interactions with some other variables. The long-term-care-benefits variable, in particular, seems to play a pivotal role in interacting with other variables to influence purchase intention. This interaction pattern reveals that purchase intention is enhanced in a multiplicative rather than an additive fashion when both unrestricted hospitals and long-term-care benefits are present in a plan. The same is true for physician restrictions and long-term-care benefits. There are slight qualifications to each of these double order interactions, which are reported in detail elsewhere (see footnote 14).

There was no significant main effect of deductible level; all of the effects of this variation involve interactions with other plan features. Size of the deductible does not seem to matter very much, given our premium pricing rules, except under a mandatory voucher system where it matters for nationally sponsored plans—a nationally sponsored plan with a $300 deductible is preferred to a zero deductible or $800 deductible.[20]

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[20] Of the three nested variations for physician-restricted plans, only reputed waiting time has a main effect, although it also interacts with other variations. The other two variations for restricted-physician plans, reputed quality of providers and reputed friendliness of providers, have only interactive effects with other variables. Medicare beneficiaries seem to be relatively uninterested in a local sponsor unless waiting time is short. The friendliness of providers only has an effect when extended long-term-care benefits are included.

C. Evidence of adverse selection and implications

Two analyses of covariance were performed to determine whether purchase likelihoods for plans are related to either past utilization history or history of serious health problems. For the first analysis there were three covariates: number of doctor visits in the past year, a binary-coded variable representing whether or not the respondent had been admitted to a hospital in the past year, and a binary-coded variable representing whether or not the respondent had been in a nursing home in the past year. For the second analysis there was one covariate, total number of health problems checked on the questionnaire, ranging from zero to 11. All within-subjects and between-subjects factors previously discussed were included in the analyses. The only difference was that the comparison to determine possible selection bias for medicare under a voluntary voucher program involved a comparison between the respondent's medicare rating and the alternative plan that the respondent rated most highly.

There are three findings concerning selection effects for the utilization measures, none of which affected the medicare comparison. The first involves an interactive effect of past physician utilization and physician restrictions. In order to illustrate this effect, table 7 shows means for those above and below the median number of visits by physician-unrestricted and physician-restricted plans. The interaction is such that the likelihood of purchase of restricted-physician plans relative to unrestricted plans is somewhat greater for those with a lower number of visits to a physician in the past year. Another effect involving utilization involves hospital utilization interacting with plan sponsor—Blue Cross/Blue Shield versus national commercial insurer—and physician restriction. The pattern of the interaction reveals that those beneficiaries who have been hospitalized prefer a nationally known commercial insurance company and this is particularly true for unrestricted-physician plans.

The number of health problems interacts with long-term-care benefits and type of voucher program. Those with more health problems checked are more likely to purchase plans with expanded long-term-care benefits and this is somewhat more likely under an optional voucher system. Finally, for those beneficiaries with a higher number of health problems, a nationally known commercial insurance company is preferred, but only for plans involving restrictions on physician choice.

TABLE 7.—INTERACTIVE EFFECT OF PHYSICIAN UTILIZATION AND PHYSICIAN RESTRICTION ON PURCHASE INTENTION

	Physician choice	
	Unrestricted	Restricted
Below median for physician visits	2.89	3.45
Above median for physician vists	2.95	3.31
Physician utilization X physician restriction interaction F(	)=	, P<.004

The selection effects reported above should eventually be incorporated into the relative pricing of plans for an analysis of system equilibrium. We have not yet done this, but our view is that the effects do not seem large in comparison with the $30 between-subjects variation included in the prices.

Our study fails to find evidence for overall favorable self-selection for AHP's in a voluntary system. One likely reason for this contrast with earlier studies is the greater range of options made available in our study, beyond simply prepaid group practice HMO's.[21] In addition, the offering of expanded coverage for long-term care may be especially important in attracting away high-utilizer subgroups to AHP's. It is important to realize, however, that the extent of favorable self-selection for AHP's may be altered by the actual plans available in any given market area. We plan in the future to perform some simulations of this problem given different mixes of available plans.

Given the relatively mild results regarding selection bias at the quoted prices, we have proceeded to estimate market share percentages—for the set of within-subject variations under different levels of the between-subject variations. The procedure that we have employed is adapted from Urban and Hauser (1980). The results were averaged over plan sponsor, extent of mental health coverage, waiting time for physician restricted plans, and friendlines of providers for physician restricted plans. Estimates available at the present time are only for the conditions in which providers in restricted plans were reputed to be of high quality, and for cases in which the deductible level for physician-unrestricted plans is $300. It is important to note that the results are dependent upon all plans being available.

For a voluntary voucher program, just slightly fewer than 50 percent of medicare beneficiaries would opt out of the current medicare program, regardless of pricing level for the alternative plans. Of those who would opt for an AHP, a majority is estimated to enroll in HMO-type plans with physician restrictions. These are certainly higher levels of switching to AHP's than have been found in the medicare HMO demostrations, but in this study many more options of possible interest to medicare beneficiaries are available. Actual market share estimates in a given area will depend upon the characteristics of the offered plans, and the level of information that each beneficiary has about the offered plans. These results are based upon complete information about the attributes varied in this study, something which is unlikely to occur in the marketplace. In addition, it should again be noted that these results do not apply to institutionalized medicare beneficiaries.

The four plans restricting choice of hospital to one major institution in the area would have relatively small market shares. When prices are high, both expanded long-term-care benefits and physician-restricted plans get higher market shares.

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[21] Marquis and Phelps (1983), who also used a prospective survey methodology, found that supplementary coverage to eliminate $1,000 of copayment risk under a catastrophic stop-loss would receive unfavorable selection. A nonelderly population was stutied. This type of result for low deductible non-HMO plans may have occurred weakly in our study, enough to offset the slightly favorable selection for the physician restricted plans.

Under a mandatory voucher system, while all plans benefit from the elimination of the medicare option, the plans unrestricted with respect to both physician and hospital choice seem to gain the most, as might be imagined given the fact that medicare is structured in this fashion. As shown in table 8, the aggregate market share of these plans, averaging across price levels, increases from 16.7 to 36.4 percent. Even so, HMO-type plans with physician restrictions would garner roughly 50 percent of all eligibles.

TABLE 8.—MARKET SHARE PERCENTAGE ESTIMATES ASSUMING INFORMED BENEFICIARIES UNDER A MANDATORY VOUCHER PROGRAM

	Hospitals unrestricted				Hospitals restricted			
	Physicians unrestricted		Physicians restricted		Physicians unrestricted		Physicians restricted	
	LTC_0 (1)	LTC+ (2)	LTC_0 (3)	LTC+ (4)	LTC_0 (5)	LTC+ (6)	LTC_0 (7)	LTC+ (8)
Fair price less $15, and $300 deductible	15.1	20.5	16.5	16.0	4.8	8.1	12.4	6.6
Fair price plus $15, and $300 deductible	14.8	22.3	16.2	16.7	6.4	6.6	10.9	6.1

Notes: LTC_0 is current long-term-care coverage, LTC+ is expanded long-term-care coverage as defined in text.

IV. IMPLEMENTATION SUGGESTIONS

Implementation of a voucher program warrants great care. Our suggestions pertaining to fundamental issues of phased implementation, regulation of plan benefits and information management are as follows:

Implementation of a mandatory voucher system should be a gradual process of including new retirees, given the desire of many current beneficiaries to stay with the current program. The process should not be so gradual, however, as to make the total number of available beneficiaries too small in the early years to attract a variety of plan sponsors, particularly in areas where the elderly population is relatively sparse. We would suggest announcing to all those individuals who will reach retirement age in the next 3 years that the voucher program will include them as of a date 3 years in the future. Thus at the start of the program those aged 65–67 would be required to participate. Participation could be available on a voluntary basis to all other medicare eligibles.

The inability of many medicare eligibles to understand insurance terminology and the effects of plan features means that eductional efforts must be undertaken with them prior to implementation. This is another reason for phased implementation—to provide younger retirees with information about alternative health plans prior to the point at which they must make decisions. In addition, with the passage of time, these younger beneficiaries are increasingly likely to have had experience in making choices among alternatives in employer-sponsored group health plans. Older individuals eligible to participate on a voluntary basis would presumable not do so if they had serious concerns about their inability to understand major plan features.

In order to assure high levels of information about specific alternative plans once a voucher system is implemented, it would be desirable to have a Government-sponsored brochure that compared available plans along relevant dimensions as in the FEHBP. We would not limit, as has been proposed in some legislation, the provision of additional information by plan sponsors who wish to send supplemental brochures or spend money on other forms of advertising. In fact, if one policy goal is to promote participation in more cost-efficient plans, advertising freedom would be necessary in order for HMO's to provide necessary information on their qualifications, finanical health, and practice patterns to address consumer concerns about these matters.

Minimum benefit definitions with some catastrophic stop-loss limits are advisable, especially if cash rebates are allowed. These definitions can be approached with the goal of thwarthing extreme misinterpretation or misrepresentation of plans. One example would be to require that, for all plans other than gatekeeper models which require all referral specialty care to be prior approved, expenses on any services covered at all, with medical justification, must be included in calculations for the catastrophic cap.

V. CONCLUSIONS

The following points summarize and conclude our discussion of the analytic issues for a medicare voucher system.

1. A phased, mandatory replacement voucher system is arguably superior to a voluntary system in many respects: In rendering the Federal Government expense more controllable in the aggregate as well as in geographic distribution, in removing the inefficiency of the subsidized medigap market, in promoting new approaches to private health insurance, including HMO's, other types of restricted provider plans, and coverage of long-term care with associated medicaid savings.

2. Loss of the medicare hospital discount may be costly to some consumers who strongly prefer to have free choice of hospital—no change in copayment in relation to hospital prices. The loss would be largely mitigated for other consumers simply by selecting plans that lead to (a) reduced use of higher priced hospitals, (b) pressures to compete on price, and/or (c) incentives for physicians to reduce hospital use. The Government might require that AHP's be allowed the same discounts given by hospitals to any other third-party carrier; such a regulation would involve a value judgment about appropriate cross-subsidization among classes of hospital payers.

Under current arrangements, it is not reasonable to expect that medicare could heavily exploit its monopsony position without reducing the supply and/or quality of services to beneficiaries. Even voluntary vouchers, appropriately priced to avoid losses to the Government, would provide an opportunity for people wishing to buy more and better care—medigap plans would not suffice because hospitals cannot bill the patient for costs above the medicare limit even though that care may be valued by beneficiaries. It would also be beneficial to people wishing to buy into other forms of cost-conscious AHP such as a simple high coinsurance plan.

3. Self-selection bias within a mandatory system might threaten the viability of high-benefit plans that have free choice of providers, unless individual risk rating of vouchers is developed, for example, age might be used for differential voucher pricing. Our arguments and evidence on this problem are less pessimistic than other authors, even in a voluntary system. With a system of open enrollment, a problem of people planning to switch into a high-benefit when they get older or foresee high expenses can be addressed with an appropriate delayed-entry fee perhaps an age-rated surcharge, or more simply a waiting period on full coverage of preexisting major health problems.

4. The potential market share for plans restricting choice of physician in order to achieve cost savings appears from our research to be higher than would be expected from past retrospective studies of HMO choice, particularly if a variety of plans is offered. The offering of expanded long-term-care benefits would be particularly appealing to consumers.

5. A restructuring of medicaid for the elderly by channeling much of current spending into premiums for medicare options, and especially for long term care, would promote more efficient choices. Our approach to catastrophic coverage and medicaid changes would limit the sensitivity of the program to problems associated with low-income individuals choosing low-benefit plans.

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HOSPITAL REIMBURSEMENT UNDER MEDICARE

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INTRODUCTION

In April 1983 Congress passed and the President signed Public Law 98-21, the Social Security Amendments of 1983, which established a national medicare hospital prospective payment system, a fundamental change in the method used by medicare to reimburse hospitals for services rendered to beneficiaries. This law followed by little more than 1 year the Tax Equity and Fiscal Responsibility Act of 1982 [TEFRA], which had made radical changes in medicare reimbursement policy. Even with these changes, which are estimated to save $6.8 billion between 1983 and 1985 over the prior law, the medicare hospital insurance trust fund is expected to go broke by 1988.[1] Consequently, the Congressional Budget Office and the Congressional Research Service were asked by the Committee on Ways and Means to convene this conference to provide guidance on possible future changes in the medicare program. It is my charge to focus on payment options for hospitals.

The discussion of options for change in the way the Federal Government directly reimburses hospitals should be more limited than that for the other areas that will be addressed at this conference. The reason for this judgment is simple: A major structural change (reform?) has just been implemented and it seems prudent to see how the health care system will adapt to it. Piling on another major change at this time would be dysfunctional and it would probably negate the benefits of both changes. This limitation does not mean that the States should be discouraged from establishing alternative reimbursement systems in which the Federal Government participates.

This paper, like Gaul, is divided into three parts. First, there is a brief summary of medicare hospital reimbursement policy. Second, certain features of the current system are examined and options for minor changes in current law—some designed to save money and others to increase the equity of the system—are proposed. In addition, the major incentives embodied in the prospective payment system are discussed. Third, some of the inherent problems in managing a restrictive *hospital* inpatient reimbursement program in essentially a fee-for-service system in an era of structural changes are addressed. These, in conjunction with trends in the private sector, lead to some recommendations for changes in the administration of the program (in the short run) and for major changes in the structure of the medicare program in the longer run.

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[1] "Prospects for Medicare's Hospital Insurance Trust Fund," prepared by the Congressional Budget Office for the Special Committee on Aging. U.S. Senate, 98th Congress, 1st session (1983).

I. OVERVIEW OF HOSPITAL REIMBURSEMENT UNDER MEDICARE

In 1965, Congress enacted the medicare program, the goal of which was to provide Federal health insurance for the elderly in order to improve their access to mainstream medical care.

The law establishing medicare mandated that institutional providers should be reimbursed for the reasonable costs of providing services to beneficiaries. In 1965 this reimbursement principle, which had been endorsed by the American Hospital Association as early as 1953, was the basis of hospital payment for most Blue Cross plans, the largest private third-party payer. Thus in incorporating cost-based reimbursement, medicare was following the then predominant practice.[2] Between 1966 and 1982, this reimbursement principle was followed although there was considerable tightening of the definition of reasonable costs both through legislation and through regulation.[3]

Between 1966 and 1982 the costs of the medicare program exploded. Hospital reimbursements, which now represent about 95 percent of part A expenditures and 71 percent of total medicare expenditures, increased at an annual rate of about 20 percent. Some of the increase in expenditures was attributed to an increase in the beneficiary population (due to the expansion of entitlement to the disabled and to people with end-stage renal disease and the growth of the over-65 population), and some to an increase in utilization. But most of the increase was attributable to increases in the unit cost of care—the cost of a hospital day. Retrospective cost-based third-party reimbursement, in a world with little patient cost sharing and an open-ended entitlement, was considered to be the major factor contributing to the explosion in hospital costs.[4] The increase in costs, accompanied by the associated increase in hospital revenues, facilitated the expansion of the hospital sector. It encouraged an upgrading of hospital facilities and services (in 1965 some were quite bad) and improved the access to the hospital system by the elderly in general and the disadvantaged elderly in particular.[5] This increased access was a goal of the program. However, if in 1965 when medicare was passed, improving access to the health care system was the major concern of public policymakers, by the mid-1970's cost containment was the overriding concern.

In 1982, the Congress passed TEFRA which changed hospital reimbursement methods. First, the basis of reimbursement was shifted from an implicit per diem system to a per case system; second, case-mix was incorporated explicitly into the payment system; and third, a limit was placed on the rate of increase in medicare costs per case that would be reimbursed. Although the language of the statute continued to use the term "reasonable costs," the concept was radically changed. Costs per case higher than 120 percent of the average costs of comparable hospitals (wage and case-mix adjusted) or which increased more than the target rate over the base year were no longer considered reasonable.[6] TEFRA also required that the Secretary develop a prospective payment system. The Secretary reported to the Congress in December 1982, and by April 1983 prospective payment was embedded in law.

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[2] The factors leading to the original reimbursement policies are discussed in H. M. Somers and A. R. Somers Medicare and the Hospitals (Brookings, 1967) and R. J. Myers Medicare (Irwin, 1970).

[3] Some important changes are: the removal of the 2-percent factor and introduction of the nursing differential (1969), the introduction of limits under sec. 223 of the 1972 amendments and their continuous tightening, the revised rules for allocating cost of malpractice insurance premiums, and the reduction of the nursing differential (1981).

[4] These same conditions predominated in the private sector as well as the public sector. Underpinning the retrospective cost-based system was a hidden stimulus in the form of tax-exempt bonds which facilitated facility and equipment purchases.

[5] See for example M. Ruther and A. Dobson "Equal Treatment and Unequal Benefits: A Reexamination of the Use of Medicare Services by Race, 1967-76" Health Care Financing Review, winter 1981, and C. Link, S. Long, and R. Settler "Equity and the Utilization of Health Care Services by the Medicare Elderly" The Journal of Human Resources, spring 1982.

The basic features of the medicare prospective payment system are the following: (1) all patients will be classified into one of 468 diagnostic-related groups (DRG's); (2) with the exception of a limited number of "outlier" patients, the hospital will receive a fixed payment per DRG to cover operating costs (initially capital costs and direct education costs will be passed through); and (3) the payment received by a hospital will vary with the area wages, whether it is in an urban or rural location, and the number of full-time interns and residents it has on its staff. There is a 3-year phase-in period during which the payment rates shift from being essentially based on the hospital's own "reasonable" costs, to being set on a national basis (with the exceptions of the adjustments noted above). Thus, with limited exceptions, by 1987 payments to an individual hospital for care provided to medicare beneficiaries will not be based on its own costs.

The law contains a number of provisions requiring studies and reports that will help guide the evolution of the system. For example, a commission is to be established to conduct studies and to advise the Secretary on changes in DRG definition and payment rates; the Secretary is to monitor the progress of prospective payment and to report on such factors as the feasibility of adjusting DRG's for severity, and whether preadmission certification should be required.

With this background, we now turn to the body of the paper.

II. OPTIONS FOR CHANGE IN THE CURRENT SYSTEM

The medicare prospective payment system [PPS] represents a fundamental change in the way hospitals are to be paid. In order for hospitals to survive under the system, administrators must make basic changes in the way they collect and use information and how they interact with the medical staff. The professional associations and consulting organizations through conferences, workshops, and journals are providing hospitals with advice on how to prepare for PPS. While these structural changes are taking place, it does not seem wise to propose another approach to hospital reimbursement. In this section, therefore, certain features of the proposed system are examined and options proposed either to save money or to improve the equity of the system. Two features, payment rates and adjustments for teaching are discussed in considerable detail because I believe they need to be changed immediately.[7]

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[6] This is obviously a very simplified description of TEFRA. The ideas incorporated in TEFRA were incubating for some time. HCFA had been working on case-mix limit system for possible implementation under the sec. 223 authority and had contemplated incorporating a rate of increase limit.

1. The payment rate

Under current law, the payment level for each DRG is to be established on a national basis by 1987 but will vary by hospital location (urban, rural), by area wage levels, and by teaching levels. The concept of a national rate and the speed with which it is to be fully implemented should be reevaluated.

Hospital care like all services is a locally produced and consumed good. Controlling for wage differences, teaching, and location (urban/rural), there are significant differences in the cost per case by region. Some of this regional difference is due to regional patterns in length of stay, some is due to differences in the prices which hospitals have to pay for factors of production such as food and electricity, and the rest to other unmeasured factors. Factor price information is consistently available at the local level only for wages. However, other prices also vary. For example, the household cost of food and electricity in Dallas are respectively 95 and 86 percent of the national average, whereas in Philadelphia they are each 112 percent of the national average.[8]

These large regional differences are apparent both from data published by HCFA and from an early analysis of the regional effects of PPS. For example, after controlling for wages, case-mix, and teaching, the medicare cost per case of urban hospitals is approximately 20 percent higher in the east north central region than it is in the east south central region.[9] Additionally, under a system with national rates, 62 percent of the hospitals in the east north central region would receive an average 13-percent reduction in their payments.[10] These large reductions in some regions would be occurring at the same time hospitals would be experiencing considerable pressure because of the overall limit imposed on how much the rates on average can increase.[11]

If these reductions were being experienced by a small percentage of hospitals within a market area, there would be no particular reason for concern. However, given the magnitude of the necessary adjustments suggested by these numbers and the number of hospitals affected, there is, I believe, significant reason for concern. There is evidence from the State rate-setting programs and from studies of the effects of section 223 limits, that the relatively high-cost hospitals have not reduced their costs. Thus, we have no evidence that hospitals can adjust to this kind of reduction in payment levels.[12] Since the majority of the *savings* from prospective payment come from the *limit* on the rate of increase in rates, and not from the reallocation of payments among hospitals, it may be wise to consider a slowdown in the phase-in of national rates. Such a slowdown is necessary to sustain the system. (It is also questionable whether such a reallocation of medicare reimbursements to certain areas of the country is warranted when there is no evidence that the quality of care is lower there.)

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[7] One issue that is not addressed is that of capital. Capital must be included in the DRG payment rate and the most feasible way of doing this is to add a fixed percentage to each DRG payment. Some grandfathering will be necessary, and/or option to put a small percentage of the payment into a State pool, if the State so wishes considered.

[8] From data reported in "Statistical Abstract of the United States," U.S. Dept. of Commerce, 1982, pp. 466 and 469.

[9] Calculated from data in the Federal Register, Sept. 1, 1983. If medicare cost per case for hospitals in the north east is set equal to 1, the relative values for the other regions are mid-Atlantic, .92; South Atlantic, .93; east north central, 1.01; east south central, .84; west north central, .97; west south central, .91; mountain, .91; and Pacific, .98.

[10] Personal communication, Congressional Budget Office.

[11] To some extent the problem faced by some "regions" are mirrored by the hospitals in central cities. The wage adjustment used by HCFA is the SMSA wage; however, wages of central city hospitals are higher than those in the "ring".

Thus I propose that the phase-in schedule be slowed down and that HCFA work with both the Bureau of Labor Statistics and the Bureau of Economic Analysis to collect better data at the local level. This is likely to be a 5-year effort. If the phase-in is not slowed down, then better data should still be collected, but in the interim, the wage adjustment factor should be applied to 100 percent of costs.[13]

2. The teaching adjustment

Under current law, the DRG payments to individual hospitals increase with the number of full-time interns and residents per bed (IRB). The increment was determined by a statistical analysis of the relationship between the medicare cost per case and IRB (controlling for other factors) which indicated that costs rose 5.79 percent for every percentage point increase in the number of interns and residents per bed. The law mandates that this factor be doubled in setting the DRG rate for hospitals; in other words, the teaching factor is to be doubled.

The doubling of the teaching factor means that the teaching institutions are at a strong advantage relative to other hospitals, and that the advantage increases with the size of the teaching programs. Thus, one option that would both save money and would treat all hospitals more comparably would be to reduce the size of the teaching factor. It should perhaps be noted that the teaching factor was originally doubled because the estimating equation contained variables (SMSA size) that are not considered in the setting of the payment rates but are positively correlated with IRB. If this coefficient were used to adjust for the indirect cost of teaching, then the teaching institutions, particularly those in large urban areas, would be relatively adversely affected. Thus, HCFA should be directed to reestimate the teaching factor, using as control variables only those variables that are actually taken into account in establishing the payment rates. Preliminary evidence suggests that the teaching coefficient would increase from 5.79 to about 9.[14] Reducing the indirect teaching adjustment from 11.58 to 9 would save $3 billion between 1985 to 1988.

For a given DRG, a teaching institution receives a higher reimbursement than a community hospital. This higher reimbursement compensates the institution both for the indirect costs associated with teaching and for the increased severity and complexity of patients seen. The teaching adjustment also helps to moderate the effect of the slight underpricing of the more complex DRG's resulting from the way that the payment rates are calculated.[15] However, many cases treated in the teaching institutions are routine, uncomplicated cases. One option that could be considered would be to eliminate the teaching adjustment for a subset of DRG's that would be identified as routine cases by a panel of experts such as the Prospective Payment Commission.

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[12] G. Anderson and J. Lave "State Rate Setting Programs, Do They Increase Efficiency in Hospitals", Medical Care, forthcoming.

[13] This solution would be indicated by statistical results reported in J. Pettingill and J. Vertrees "Reliability and Validity in Hospital Case-Mix Measurement", Health Care Financing Review, December 1982.

[14] Personal communication from Gerard Anderson, Johns Hopkins University, formerly at the Office of the Secretary, DHHS.

The teaching adjustment is not designed to compensate these institutions for the relatively higher proportion of uncompensated care they provide. However, large teaching hospitals on average treat a sizable proportion of patients (20.3 percent) who are uninsured. This compares with 8.2 and 9.8 percent of admissions for nonteaching and small teaching hospitals respectively.[16] Thus, as medicare and other payors tighten their payments, the financial situation of these institutions will worsen. DRG payments could be increased so that medicare would share in the cost of providing care to people without the financial resources to pay for it. (Some of the money saved by reducing the teaching adjustment could be used to pay for uncompensated care.)

Thus it is recommended that HCFA be redirected to reestimate the teaching coefficient and that adjustment for indirect teaching costs be reduced. In addition, it is recommended that the medicare policy of not sharing in the cost of uncompensated care be ended and that the DRG payment (to all institutions) be increased to reflect some sharing in that cost.

3. Outliers

Under current law, hospitalized patients who have long lengths of stay or who incur charges significantly higher than the average patient in a given DRG are classified as outliers and the payment to the hospital is adjusted upward. There is, however, no provision in the law to characterize patients who stay a very short time, relative to the average, as an "outlier" and to adjust the payment for them accordingly. Thus, for some DRG's, there may be incentives to admit someone as an inpatient who could be treated on an outpatient basis because it is profitable for a hospital to do so. (This outlier problem is one of a class of admission problems to be discussed in more detail below.) To limit this incentive, Congress should mandate that outlier criteria be developed for those discharges that stay a significantly shorter time than the average. This incentive could also be reduced by establishing preadmission review.

4. Technology

Under current law, the Prospective Payment Commission is to advise the Secretary with respect to the general increase in rates to allow for technological changes as well as revisions in the definition of the DRG's and the prices paid for them. This continuous adaptation of the system is critical. The DRG system will stimulate the development of and introduction of general or DRG specific cost reducing technologies. It is easy to predict, however, that there will be strong pressures on the Commission to expand the number of DRG's to adjust for different ways of treating similar patients, and to increase the relative price of each DRG as new, but more expensive diagnostic and treatment procedures become available.

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[15] Office of Technology Assessment, "Diagnosis Related Groups and the Medicare Program: Implications for Medical Technology," Washington, 1983, pp. 31-32.

[16] From special tabulations prepared by G. Anderson from a 1981 survey of hospitals conducted by the Office of Civil Rights.

The revised payment system offers an opportunity to moderate the flow of new technology into the health care sector. Better information should be required before either payment rates or DRG's are revised.[17] The Congress might consider providing some guidelines to the Commission and the Secretary to use in revising DRG's; for example, implicit standards could be developed on the need for expensive technologies to meet certain standards of effectiveness—where effectiveness would be measured both in terms of the effect on life span and life quality.

5. *Rate of increase limits*

The current law gives explicit direction on how payment rates should be increased at least in the near future. Essentially payment rates on average are to increase by "market basket plus one." The market basket is a measure of the rate of increase in the prices that hospitals have to pay for their inputs, and the additional 1 percentage point is to provide some room for technological change. As the market basket price index has consistently increased more than the price index of goods and services in general, this increase rule almost guarantees that medicare and average reimbursements per case hospital costs will continue to increase at a faster rate than the price of goods and services in general.

Thus to reduce the escalation in the costs of the medicare [18] program, either of these factors must be reduced. The current constraints are very tight relative to historical experience, and it seems worthwhile to see if they can be effective before suggesting tightening them further. (Tightening them further is also unrealistic unless the policy of quickly moving to national rates is reversed.) In addition, the amount that medicare pays is constrained by what is happening in the private sector. If the private sector does not follow medicare by implementing policies that complement its cost containing efforts, then the gap between the public and private payment rates would become quite wide. In that case, it is unlikely that medicare could tighten its payment rates further unless a general cost control program were implemented.

6. *State rate setting*

The current law gives some encouragement to States to implement all-payor hospital State rate-setting programs. It seems likely that the new medicare law will stimulate interest in such programs for a number of reasons. Some private insurers, for example, are concerned that the effect of the new medicare law will be to shift costs to them and they, therefore, would like to constrain the hospitals' ability to do so.[19] In addition, hospitals, particularly those in the most negatively affected regions, may believe that they will have more control over their individual fates under a State rate-setting system than under a medicare DRG system. A State rate-setting system, with its built-in appeals process, is likely to be more responsive to the needs of individual hospitals, and the distribution of winners and losers is likely to be much different under the two systems. In addition, given that hospitals are important parts of the fabric of a community, many communities may want control over the structure of the hospital sector. Finally, as State rate-setting systems are all-payor systems, they provide a social mechanism for dealing with the problem of uncompensated care and can moderate a tendency toward a "two class medical system for medicare patients".[20] Many policy analysts argue that State rate-setting programs should be discouraged because they will stifle innovation and limit competition.[21] However, I do not believe that innovation at the State level should be discouraged; rather the Federal Government should take a neutral position.

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[17] There is considerable agreement that new technology is a major factor increasing costs and new procedures are often widely diffused before their effectiveness has been established. See for example S. Altman and R. Blendon, ed., Medical Technology: The Culprit Behind Health Care Costs, DHEW publication, N. PHS 79-3216.

[18] One way to change this market basket index would be to substitute the increase of general area wage [illegible] he increase hospital workers wages.

7. Cost containment

Can the medicare prospective system be effective, if it is the only payor that is limiting its reimbursements? Will the final result be a two class system, in which public and private patients are separated either by facility or by treatment? Should the Federal Government once again try to implement general hospital cost containment legislation? Although there is no doubt that it is much more efficient to manage a DRG system in the context of an all-payor system, my recommendation is to once again, take a wait-and-see strategy. Public expenditures represent approximately 56 percent of overall revenues. The private sector, too, is trying to control its expenditures on health care services, and so it is highly unlikely that it will idly sit by and let the hospitals "cost shift." Thus, they, too, are searching for innovative methods of controlling costs, and one option is clearly to follow the Federal lead and base payments to the extent possible on DRG's. Although there may be some institutions that will not accept public payors, and some cases where treatment patterns will vary, this is unlikely to be widespread. However, if the rate of increase in hospital costs is not moderated, or if a distinct two class system emerges, then it will be necessary to implement a general hospital cost containment program.

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[19] Jame Morefield, "View from Insurers" paper prepared for "Health Care Institutions in Flux: Changing Reimbursement Patterns in the 1980's," conference sponsored by the Institute for Health Policy and Administration, Department of Health Services Administration, George Washington University, Washington, D.C., September 1983.

[20] In some regions the potential for two class system under State rate-setting exists if the total medicare allocations to a State is directly related to what it would be under a DRG system with *national* rates; particularly in the short run.

[21] F. Sloan, "The Academic Viewpoint," paper prepared for "Health Care Institutions in Flux: Changing Reimbursement Patterns in the 1980's," conference sponsored by the Institute for Health Policy and Administration, Department of Health Services Administration, George Washington University, Washington, D.C., September 1983.

III. THE LIKELY EFFECTS OF THE MEDICARE PROSPECTIVE PAYMENT SYSTEM

Prospective payment represents a fundamental change in the method of paying for hospital care; a method with which we have limited experience.[22] As noted above, for a hospital administrator to be able to respond effectively to the system, changes will have to be made in the hospital's accounting and reporting systems and the relationship between administration, trustees, and staff. The per case system should promote efficiency in the production of health care services and in the development and adoption of cost reducing technologies. It will have many other effects, possibly resulting in a decrease in inpatient hospital costs while increasing total health system costs or it may even lead to increased hospital use. These effects will have the consequence of offsetting some of the expected savings from prospective payment.

The most significant of these responses are listed below:

(1) There will be incentives to decrease the services provided to patients; it is easy to predict bitter disagreements about whether these reductions are a "rational" response to newly imposed constraints or represent a deterioration in the quality of care provided.[23] In addition, some hospitals will eliminate some services entirely and will stop treating certain conditions that require the curtailed services or are simply more costly than payments.

(2) Lengths of stay for particular diagnoses should decrease, but use of home health agencies, nursing home beds, and rehabilitation centers will increase. It is possible that patients seen in these other settings will be "sicker" (and thus more costly) on average than those treated before the implementation of PPS.

(3) The number of admissions and readmissions will likely increase. Some patients who could be treated as outpatients may be treated as inpatients. In addition, there will be some incentives to space treatments or operations (if possible) rather than to do them during the same hospital episode. This incentive will be even stronger for those hospitals experiencing decreased occupancy rates—induced in part by shorter lengths of stay encouraged by PPS.

(4) Preadmission testing should increase, as it will occasionally be possible to charge for preadmission testing under part B and collect the full DRG rate under part A. (This is a form of unbundling--unbundling the services while in the acute care setting is illegal.)

(5) Some legitimate recoding of diagnoses may take place. For example, if "frequency of urination" is noted as the primary diagnosis rather than "hypertrophy of the prostate" for a patient who has a transurethral resection of the prostate

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[22] DRG's are the basis of payment in New Jersey. However, the rate for a given DRG varies across hospitals and are more closely related to the individual hospitals costs and many more patients are identified as outliers.

[23] Some of the reduced services will be truly unnecessary while others will represent services that have a positive but small probability of affecting health outcomes. See for example W. Schwartz "The Competitive Strategy: Will It Affect the Quality of Care" in J. Meyers, ed., Market Reform in Health Care, American Enterprise Institute, Washington, D.C., 1983.

gland, the patient will be classified in DRG 306 rather than DRG 336. The payment for DRG 306 is about $290 higher than that for 336.[24] In addition, if the payment to marginal cost relationship varies across the alternative treatment modalities, the treatment selected may be influenced by payment levels.

(6) Since every DRG represents a collection of different diagnoses and conditions with their associated treatments, it is possible that some providers may attempt to establish policies to "skim" patients within a given DRG; that is, they may try to select only the relatively inexpensive patients within a given DRG and transfer the sicker patients elsewhere (the extent to which such policies can be developed and physicians encouraged to follow them, is problematical).

(7) Services that have been cross-subsidized by other services are likely to be phased out. Some of these services such as social services, nutritional counseling, health promotion or prevention activities may be services that contribute to a decrease in the cost of posthospital care, but to an increase in inpatient costs.

(8) The new financial arrangements will further stimulate the restructuring of the hospital sector.

Some of these possibilities are a general response to the end of open-ended financing, some a response to constraints being imposed on only one part of the system—the inpatient hospital sector. Other changes will be a response to the unit of payment (i.e., the case and not the patient day) and still others a response to the definition of the reimbursement unit (the DRG with its imperfect patient classification and pricing system—however, no case-mix system will be perfect).[25]

The impact of these potential effects on the costs of the medicare program and the quality of care provided are difficult to anticipate. They may be so small that there is no need to develop countervailing regulations, or they may be sufficiently extensive to overwhelm the system. (The various incentives to increase admissions have been a major cause for concern. Yet the evaluation of the State rate-setting programs have indicated that the utilization effects were small.)[26] Many of these problems, however, were identified by Congress which mandated that the Secretary do a series of studies and to make recommendations to modify the system. It also mandated that the professional review organizations [PRO's] focus on both quality of care and appropriateness of admissions.[27]

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[24] Example was suggested by Jack Wennberg. The numbers were calculated from data in the Federal Register.

[25] Some, although not all, of the pricing problems for the DRG's should be eliminated when the rates are updated in 1986. At that point, the major possibilities of increasing the reimbursement by selecting the most profitable DRG rate will be eliminated.

[26] An analysis of the effects of State rate setting on admissions and length of stay found no effect on admissions. Length of stay in some States (i.e., New York) which paid on the basis of a per diem rate *decreased* relatively less over the studied time period than the average decrease across all States. See N. Worthington and P. Piro, "The Effects of Hospital Rate Setting Programs on Volumes of Services", Health Care Financing Review, December 1982.

[27] There has been some question about whether the payment rate should be reduced if the hospital experiences increased admissions, particularly if the marginal cost of an admission is lower than the average payment rate. I would argue against this for two reasons: (1) medicare admissions are only a fraction of total admissions, and they can rise when total admissions fall; and (2) research indicates that if the increase in admissions is expected to be permanent, then

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IV. LONGRUN SOLUTIONS

If the perverse incentives that are embedded in the prospective payment system prove to be large, then I do not believe that they will be solvable within the current structure of the medicare system.

Medicare, along with most private insurance plans, makes coverage and reimbursement policies that vary according to the location of the service and the characteristics of the individual or group providing that service. As the number of alternative providers and sites increase, there is great pressure to extend medicare reimbursement to them. It is a fee-for-service system where decisions must be made about what prices are to be paid for which services in what location.[28] It is essentially an open-ended system, in which there are few limits placed on the number of units of service that will be paid for.

The current structure of the medicare program does not lead to the most efficient mix of services (inpatient, physician, outpatient, etc.) or to the "ideal" number of services. The current financing mechanisms become more problematical as the number of services and providers, which are both complements and substitutes for each other, increase. The problems multiply when there is considerable discretion as to whether to or how to diagnose and treat particular conditions. Under this system, the direction of regulation is clear: Increased preadmission review, increased governmental regulation over how and where care is delivered, and increased control over the prices of the individual services. Most of the problems these regulations are designed to correct will exist *regardless* of the particular *structure* of a hospital prospective payment system.

There are two longrun alternatives to increased regulation: Increased cost sharing or increased use of competing capitated systems or managed health care delivery systems. The first option does not seem viable if past history is any guide. Many medicare beneficiaries would purchase supplemental medical insurance; for others, welfare assistance programs would bear the cost. Thus the incentive effects of increased cost sharing would not be realized.[29]

The second option would in effect turn the medicare program from an open-ended system to a closed system by enrolling the medicare beneficiaries in managed health delivery systems. Although HMO's are the classic managed system, a number of other forms are emerging. This option would relieve the Federal Government from setting individual prices, would encourage the efficient *mix* of services and providers, would reduce the incentive to increase the volume of services, and would stimulate *effective* health education and promotion activities. It also would allow for regional variations in the practice of medicine. The drawbacks of capitated

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marginal cost is close to average cost. See B. Friedman and M. Pauly, "A New Approach to Hospital Cost Functions and Some Issues in Revenue Regulation," Health Care Financing Review, winter 1983.

[28] See for example, D. Young, "What Should the Government Pay for, and Where" in S. Altman et al., Ambulatory Care (Lexington, Boits, Lexington, 1983).

[29] M. Gornick has proposed a system of increased cost sharing with a catastrophic cap. If the catastrophic cap were set at a "reasonable" level, it is possible that the elderly would not purchase supplemental insurance. However, this system does not really eliminate the need for separate constraints on hospital costs.

systems are equally well known. There is a need to adjust for the health status of enrollees in order to reduce the disincentive of enrolling people with deteriorated health status and who will be heavy users of services. There is also an incentive to underproduce services. In addition, it is unlikely that these systems would have the same ability to set prices as the Federal Government which is exerting more and more of its monopsonistic power. Another paper at this conference is devoted to vouchers—and these issues are discussed in more depth there.[30]

While medicare policy is undergoing change there are also some changes taking place in the private sector. Private payors (employers) are becoming more actively involved in health care policy and in seeking mechanisms to control their health care liabilities. One result is the increased growth of HMO's and of other alternative delivery systems, including preferred provider arrangements. While preferred provider arrangements are still evolving, they seem to have some basic characteristics, the most important of which are strong utilization review and controlled use of providers. (The enrollee choice of providers can be restricted to a subset of providers, or they can use other providers by paying an additional fee.)

One way, however, for alternative delivery systems to reduce costs is to control directly where patients receive care. Thus it is likely that they will promote the use of lower cost alternatives. One policy would be to limit use of tertiary care institutions to those patients needing tertiary level care. This control over the site of patient hospitalization is likely to take place even in rate-setting States as long as there are significant differences among hospitals in the cost per payment unit (day, case, or DRG). Thus it seems likely that the longrun effects of prospective payment systems, controlled patient choices, and the growth of alternative delivery systems will put significant pressure on our premiere health care institutions. Patient revenues will thus become a much less reliable source of funding for training and research. It is likely that these other issues will have to be explicitly addressed as options for change in the medicare program are considered.

V. Summary and Conclusions

With the implementation of the prospective payment system by medicare, the Nation has embarked on a national experiment in hospital reimbursement. In order for hospitals to survive, major changes will have to be made in the internal administrative systems, in the way decisions are made, and in the relationships between trustees, administrators, and physicians.

Since the system is new it is important to let it evolve. However, certain features of PPS should be modified in the short run in order to sustain it in the long run. The phase-in period should be lengthened; better factor price information at the local level should be collected; the current adjustment for indirect teaching costs should be reduced, but an adjustment for the level of uncovered care provided by a hospital should be added. Research on refining the basis of payment (the DRG) and the method for determining the payment rates should be encouraged and funded.

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[30] In the short run, it would make sense to merge the two parts of medicare administratively. The distinctions between inpatient and outpatient care are becoming blurry. In addition, to the extent that the HCFA contractors move from being primarily claims processors to more active monitors of the use of services, they need to know about the overall use of services, not just one piece.

The health care system in general and the hospital industry in particular will respond to the PPS. As lengths of stay decrease and hospital occupancy rates fall, some hospitals will close wings and others may close completely. It is easy to predict that there will be great outcries that the quality of care has diminished and that the practice of medicine is being interfered with. It is, therefore, important that the PRO's monitor the quality of care. It is, however, essential to recognize that the system is designed to reduce inputs and to alter current practices that have developed in response to open-ended systems. Thus, outcome measures of quality, unrelated to treatment patterns, will have to be defined. Members of Congress will be under tremendous pressure to ameliorate the situation—a pressure which should be, by and large, restricted.

Although I have argued that the DRG system should be allowed to evolve, it is possible that it will collapse.[31] In that case two alternatives should be considered: (1) a simple payment rate per case, initially based on the hospital's own base costs and increased by the market basket with a gross case-mix adjustment at final settlement could be set; or (2) preferred provider arrangements with certain hospitals to provide services to medicare beneficiaries could be developed—a policy that would require modifying the freedom-of-choice provisions in the medicare law.

As noted earlier, PPS is a pricing policy: It controls the price of only one input (acute hospital care) that goes into patient treatment. Given the increase in the cost in medicare, pricing policies will no doubt be developed for all other services. Utilization review activities will have to be strengthened in order to control the quantity of services used and their mix. However, as the number of alternative sites and providers multiply (as they seem to be doing), the decisions that HCFA have to make will increase exponentially.

This dynamic leads me to conclude that the delivery of medical services to the medicare beneficiaries will have to be managed. Federal regulations are one method of management, but they are likely to be rigid and not sensitive to regional or local concerns. They also promote the development of institutions that are responsive to reimbursement policies as opposed to real costs. In addition, prior experience suggests that regulations have not been effective. Thus it is important to promote the development of alternative systems of care in which organizations at risk are responsible for providing services for medicare beneficiaries. With the exception of the price of acute hospital care, which may still have to be controlled, pricing policies with respect to other providers can be left to the private sector. The HMO strategy is one such strategy, preferred provider arrangements is another, the gatekeeper is a third, and putting areas up for bid for *management* by the contractor is yet another. The growth of managed systems, however, is the topic of another paper and more HCFA demonstrations.

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[31] At the last OTA policy meeting, one prominent consultant bet another the DRG system would collapse—the first one gave higher odds.

These are two implications of the recent changes that are taking place in the health care sector that will have to be addressed by the legislators. The first is the effect of the tightening of hospital payment levels on the hospital's ability to finance uncompensated care. The second is the likely effect of growth of alternative delivery systems and competition on the ability of teaching hospitals to continue to support the training of interns and residents and research out of patient revenues. As the future of hospital payment policy under medicare is being debated, so, too, must the Federal role in funding uncompensated care and research and training be discussed.

PHYSICIAN REIMBURSEMENT UNDER MEDICARE: AN OVERVIEW AND A PROPOSAL FOR AREA-WIDE PHYSICIAN INCENTIVES

(*By* Peter D. Fox, *Lewin and Associates, Inc.*)

I. Introduction[1]

Discussions regarding ways of controlling medicare costs have focused most heavily on hospital services, despite the fact that expenditures for physician services have, for several reasons, risen at a faster rate (see table 1). First, hospital services represent the largest expense item. Second, the impression is widespread that they, rather than physician services, have increased the most rapidly. Third, the data base is better, and it is easier to define an episode of inpatient care than one of outpatient care. Finally, there is greater potential for hurting beneficiaries if ill-considered physician reimbursement changes are made. Few hospitals could survive financially without medicare, whereas many doctors could. Also, unlike physicians, hospitals are precluded from billing patients over the amount that medicare recognizes as reasonable.

TABLE 1—MEDICARE BENEFIT PAYMENTS, 1977–81

[Dollars in millions]

	1977	1981	Annually compounded growth rate (percent)
Part A:			
Inpatient hospital	$14,150	$26,421	16.9
Home health	255	666	27.1
Skilled nursing facility	315	383	5.0
Total, part A	14,720	27,470	16.9
Part B:			
Physicians	4,751	8,948	17.1
Outpatient hospital	767	1,703	22.1
Independent laboratory	68	154	22.7
Home health	105	148	9.0
All others	490	1,168	24.3
Service category unknown	10	65	59.7
Total, part B	6,191	12,186	18.4

Source: "HCFA Program Statistic," Health Care Financing Review, IV, No. 4 (Summer 1983), pp. 115, 117.

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[1] The author has benefited from the comments of George Schieber, Director, Office of Policy Analysis, Health Care Financing Administration, and Jack Hadley, senior research associate, Urban Institute.

Yet, there are strong reasons for focusing on physicians from a cost perspective. Expenditures for physician services are expensive in their own right and are growing rapidly, mostly due to changes in utilization and practice patterns rather than because of increases in medicare payment levels for individual items of service. The increase in per capita expenditures, adjusted for the physician component of the CPI and the impact of fee screens, amounted to between 3 percent and 4 percent annually between 1975 and 1979 and averaged 7.3 percent annually in 1980 and 1981.[2] These percentages reflect principally increased utilization and intensity. Second, physicians play a substantial role in determining the utilization of both the services they provide and those provided by others, such as hospitals, home health agencies, skilled nursing facilities (SNF's), and outpatient laboratories. Thus, no cost containment strategy is complete, or even terribly effective, if it ignores physician behavior.

Federal legislation enacted in the last 2 years included provisions that affect physician behavior, but not in a comprehensive manner. Most notably, the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and the Social Security Amendments of 1983 authorized the setting of payment levels to hospitals on a per admission, or per case, basis. The greatest opportunity for hospitals to reduce per case costs under the new prospective payment system is to assure that the attending physicians are prudent in their prescribing of ancillary services and in the lengths of stay they generate. Thus, the new prospective payment system creates pressures for hospitals to influence doctors' behavior.

On the other hand, the new system also creates pressures that can result in these savings being partially offset. Although hospitals have always had incentives to increase admissions, these are enhanced by the additional net revenues that each admission generates, particularly in the case of patients within a diagnosis related group (DRG) who are not severely ill. For example, shifting from ambulatory to inpatient surgery can be highly remunerative. The new system also generates incentives for hospitals to order services that facilitate early discharge (e.g., high technology in the home, SNF's, and home health) but that do not necessarily reduce total costs. Thus, the prospective payment system by itself is an incomplete strategy.

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[2] "1983 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund." (Communication from the Board of Trustees, Federal Supplementary Medical Insurance Trust Fund, June 1983.)

Another significant TEFRA provision allows the Health Care Financing Administration (HCFA) to enter into new forms of risk contracts with health maintenance organizations (HMO's) and other so-called competitive medical plans. In effect, the act created a voucher system by paying the plans on behalf of beneficiaries who join an amount equal to 95 percent of average adjusted per capita costs, which is an estimate of what costs would have been had the beneficiary remained in the fee-for-service system. However, since enrollment is voluntary and payment is tied to a free-floating fee-for-service system, the approach is, again, incomplete.[3]

These and most other changes being seriously debated do not comprehensively address ways of bringing about changes in physician behavior within the context of the fee-for-service system, which is likely to be the predominant delivery mode for the foreseeable future. Thus, other reforms warrant consideration. The next section of this paper summarizes problems with physician reimbursement under medicare and discusses some of the solutions that have been suggested. The section after that presents a proposal for area-wide physician incentives, which are designed to alter the practice patterns of fee-for-service physicians.

THE CURRENT MEDICARE REIMBURSEMENT SYSTEM: PROBLEMS AND PREVIOUSLY SUGGESTED SOLUTIONS

The medicare program reimburses physicians on the basis of the customary, prevailing, and reasonable charge method. This method is essentially identical to what is referred to as usual, customary, and reasonable (UCR) reimbursement for private coverage. Under this approach, physicians are paid what medicare judges to be reasonable charges, which is defined by statute as the lesser of: the individual physician's actual billed charge; the amount that he or she customarily charges for that procedure, defined as the median of actual charges; and the prevailing charge in the community, defined as the 75th percentile of customary charges within a given locality.

An important characteristic of the charge screens is that they are updated each July for the following 12 months based on data from the prior calendar year. The failure to update more frequently creates lags in recognizing increases in physician fees in private markets. However, until a few years ago medicare payment levels were probably not substantially below private markets. Sloan et al. reported in 1977 that, each of seven procedures analyzed, medicare fees averaged at least 92 percent of the best Blue Shield plans in their respective areas, and medicare and Blue Shield fees combined averaged 75 to 80 percent of what physicians report as their usual charge.[4]

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[3] Some proponents of procompetitive approaches believe that, as these prepaid plans attract enrollment, the residual fee-for-service system will be induced to discipline itself as a competitive reaction. However, this theory is at best untested. A mandatory voucher approach might be more likely to achieve this result. However, it raises other problems and is beyond the scope of this paper.

[4] F. Sloan, J. Cromwell, and J. Mitchell, "A Study of Administrative Costs in Physicians' Offices" (Abt Associates, 1977), quoted in Ira Burney and Jon Gabel, "Reimbursement Patterns

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Increases in medicare payment levels were restrained further in 1972 when the social security amendments limited the rates of increase in the prevailing screens to an index that reflects inflation, referred to as the economic index, using fiscal year 1973 as the base year. The economic index is a weighted average of the cost of office practice and wage rates in the economy as a whole. Since physician fees have historically increased more rapidly than the economic index, an important and insufficiently appreciated consequence is that the reimbursement system is gradually changing from one that reflects the distribution of charges in the community to a fee schedule. Importantly, the emerging fee schedule rigidly maintains the ratios among fees (e.g., among specific procedures, specialities, and geographic areas) that were in effect in 1972. Thus, the program has no mechanism to make adjustments as procedures become relatively more or less costly in relation to one another.

The current system has a number of problems. The more services the physician provides, the greater resulting income. Thus, it encourages the provision of services that may be marginally necessary or completely unnecessary. It is also highly inflationary. Although the economic index was intended to provide a measure of restraint, it only limits what medicare will pay for individual items of service and leaves utilization unrestrained. Indeed, one of the problems of fees restraints alone is that they can induce increased utilization, although there is debate regarding the extent of this effect.[5] Finally, it tends to reward high technology and procedural medicine over hands-on care (particularly primary care) and pays at higher levels in urban than rural area than are justified by cost of living or other differentials that should be reflected.

To be sure, these problems are not unique to medicare. In particular, the incentives to increase volume are inherent in UCR method of reimbursement of private insurance, and the inflationary impacts are due to the combined effects of public and private payment mechanisms, not to medicare alone.

Two other problems also characterize the medicare physician payment system. First, it is confusing to beneficiaries and providers alike, since, commonly, neither knows the payment level in advance of the bill being submitted for reimbursement. Second, the billing mechanism has been problematic. Physicians decide on a claim-by-claim basis whether to bill the medicare carrier or the patient. If they bill the carrier, they agree to accept the medicare-determined reasonable charge level as payment in full. This is known as accepting assignment. Alternatively, physicians can bill beneficiaries directly for any amount, and the beneficiary is financially liable to the physician for the difference between billed charges and medicare-determined reasonable charges. This liability is in addition to the regular medicare cost sharing. One consequence of the physician's right to bill the patient for unassigned claims is that a high proportion of the budgetary savings that result from the economic index are achieved at the expense of the beneficiary rather

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under Medicare and Medicaid," in Jon Gabel, et al., eds., Physicians and Financial Incentives (Department and Human Services, Health Care Financing Administration, 1980.)

[5] See, for example, Jack Hadley, John Holahan, and William Scanlon, "Can Fee-for-Service Reimbursement Coexist With Demand Creation?" Inquiry, vol. 16 (fall 1979), pp. 247–258.

than from fee increases being restrained. This is demonstrated in table 2, which shows the rate of charge disallowances due to the fee screens increasing from 12.2 percent in 1973 to 23.7 percent in 1982, a significant increase in beneficiary cost sharing. (Table 2 also displays the net assignment rate, which has remained surprisingly stable.)

TABLE 2.—NET ASSIGNMENT AND CHARGE REDUCTION RATES 1973–82

[In percent]

	Net assignment rate [1]	Net charge reduction rate
Calendar year:		
1973	52.7	12.2
1974	51.9	14.4
1975	51.8	17.4
1976	50.5	19.5
1977	50.5	19.0
1978	50.6	19.3
1979	51.3	20.8
1980	51.5	22.4
1981	52.3	23.5
1982	53.0	23.7

[1] Net of certain hospital-based physician billings.

Source: HCFA/Bureau of Data Management and Strategy.

Reflecting these problems, a variety of physician reimbursement reforms have been debated, albeit less extensively than potential hospital reimbursement changes. The explicit creation of a fee schedule has been advocated for a number of reasons. It would be more understandable to both beneficiaries and physicians. In addition, proponents hope that it would reduce existing biases that favor inpatient over outpatient care and procedural medicine over hands-on care. Whether it would in fact do so would depend on the process and politics whereby the fee schedule was set initially and periodically revised over time. One interesting and encouraging note is that two separate organizations of physicians that each formed preferred provider organizations in Denver needed to develop fee schedules; in both instances, a conscious decision was reached to favor primary care physicians.[6] Proponents also hope that fee schedules would also narrow urban-rural differentials. However, payment levels that are out-of-line with community norms raise problems, since only about 41 percent of medicare bills not involving medicaid are assigned.[7] Payment levels that exceed community norms can result in higher incomes to physicians with only marginal effect on behavior, and low ones leave the patient holding the financial bag.

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[6] Peter D. Fox and Eileen J. Tell, "Private Sector Health Care Initiatives: A Case Study of the Denver Area" (Washington, D.C., Lewin and Associates, 1983.)

[7] Derived from internal CBO memo, which in turn is based on summaries of patient bills submitted in 1980. CBO, using HCFA data, reports that 51.0 percent of bills are assigned, of which 10.5 percent are for joint medicare-medicaid eligibles and 36.5 percent are for those only eligible for medicare. The 41 percent is derived by dividing 36.5 percent by 89.5 percent, thereby removing joint eligibles from both the numerator and the denominator. This percent has, presumably dropped slightly since 1980.

Another approach is a physician-DRG system that would reimburse physicians at a preset rate for each patient in a given diagnosis-related category. Such an approach—which is really an aggregated fee schedule—would probably be realistic only for hospitalized patients, since determining the end-point of a spell of illness for a nonhospitalized patient is difficult.

Independent of changes in the setting of payment levels, the approach to assignment could be changed. One proposal would mandate assignment, thereby precluding physicians from billing over the medicare-recognized level. Mandated assignment would result in some physicians limiting their medicare practices, although I suspect far less than would be indicated by the 59 percent of claims not involving medicaid that are unassigned. Another approach would be to offer physicians the opportunity to sign participation agreements, but without mandating assignment. Those who did would agree to accept assignment for all patients; the remainder would not be allowed to accept assignment, except for joint medicare-medicaid eligibles, and thus would consistently bill the patient. Mitchell and Cromwell, based on a survey, report that two-thirds of physicians, faced with an all-or-nothing decision, say that they would not accept assignment, representing a decrease in the percent of assigned visits of 11 percent for general practitioners and 12–25 percent for general surgeons, internists and obstetricians/gynecologists.[8] Other approaches that have been suggested include mandatory assignment on large bills, inpatient physician bills, and/or bills for services, such as selected ophthalmic procedures, that are performed principally on the elderly.

Finally, measure have been proposed to help beneficiaries better understand medicare reimbursement and promote access to price information. For example, posting of physician fees could be mandated, and physician assignment rates publicized.

AREA-WIDE INCENTIVES [9]

All of these changes warrant serious discussion. However, none address the underlying problem of the blank check mentality associated with the incentives embodied in the fee-for-service system as it now operates, particularly those to increase the volume of services. Thus, a new approach is proposed that entails a system of area-wide physician incentives. This approach is not mutually exclusive with either the cost containment provisions now in title XVIII or with most proposals that are being seriously considered. Examples of such proposals include expanding the voluntary voucher system now in law or limiting the amount of employer contributions to health benefits that are exempt from the personal income tax. Indeed, the proposal is premised on the belief that a multifaceted strategy that relies on a combination of consumer incentives, provider incentives, and Government appropriately using its purchasing power will have greater impact than any unidimensional approach.

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[8] Janet B. Mitchell and Jerry Cromwell, "Impact of an All-or-Nothing Assignment Requirement under Medicare," Health Care Financing Review, vol. 4 (summer 1983), pp. 59–78. Whether physicans would, in fact, behave in this manner is conjectural. Furthermore, some who advocate all-or-nothing assignment argue that it would reduce beneficiary confusion.

[9] In 1979, in my capacity as Director of the HCFA Office of Policy Analysis, I proposed this approach to then-Administrator Leonard D. Schaeffer. Subsequently, HCFA's Office of Research and Demonstration staff performed analyses on the topic and prepared a Request for Proposal [RFP] for demonstrations. In 1981, for whatever reason, a decision was made not to issue the RFP. In preparing this paper I have benefited from reviewing some of the HCFA documents from that time.

The proposal reflect three assumptions. First, fee-for-service will continue to be the primary mode of delivery for the foreseeable future. Second, in order to moderate significantly the large medicare trust fund deficits that are anticipated without reducing benefits or increasing revenues,[10] it is essential to address physician practice patterns. Third, long-established patterns of physician attitude and behavior can best be altered through changes in underlying incentives. Less than efficient medicine is not the result of fraud, abuse, or bad intentions. Rather, it is the consequence of the third party payment mechanisms, both public and private, that have evolved over time.

Area-wide incentives would begin to alter these incentives. The key steps in structuring them are conceptually straightforward:

Reasonable market areas would be designated.

Targets for total medicare expenditures (parts A and B) within each market area would be established prospectively.

After the end of the time period in question (assumed herein to be a year), actual expenditures would be determined, and the variance—that is, the difference between targeted and actual expenditures—would be calculated.

Physicians would be rewarded or penalized depending on whether there was a postive variance (actual expenditures less than target) or a negative variance (actual expenditures more than target).[11]

The major advantage of this approach is that it would entail a fundamental change in incentives within the fee-for-service structure that would be comprehensive in scope, that is, it would encompass all medicare-covered services rather than just a single service, such as hospital or physician. Importantly, although one would anticipate that changes in physician organization would occur, these would evolve as a consequence of the change in incentives rather than being mandated, as the Federal Government now does through the professional review organization (PRO) program, which is being implemented as a successor to the PSRO program. In the long run, physicians will be encouraged to promote community efforts to reduce excess hospital capacity and to be less aggressive in promoting capital expenditures that increase costs. Finally, as described below, the targets can be adjusted to reduce the enormous disparities across geographic areas in expenditures per beneficiary that now exist and that raise severe equity issues.

A fundamental difference between area-wide incentives and health maintenance organizations or other voucher systems should be noted. HMO's entail the provision of services to a voluntarily enrolled population, and no physician is required to work for the HMO. In contrast, the basic unit of the area-wide incentive system would be a geographically defined population. Importantly, the only way physicians could exclude an abusing or inefficient colleague is by influencing their practice patterns, having them removed from the program, or otherwise disciplining them. Thus, the approach is not a procompetitive one as the term is generally used, but neither is it fundamentally regulatory in nature.

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[10] Congressional Budget Office, "Changing the Strucuture of Medicare Benefits: Issues and Options" (March 1983).

[11] A positive variance can be viewed as a savings relative to the target, and a negative variance a loss.

In designing the area-wide incentive program, a variety of issues will have to be confronted, including:

The target level;
The reward and penalty structure;
The formula for distributing bonuses and penalties to individual physicians;
The availability of data;
The designation of geographic boundaries within which the targets are set;
The problem of patient out-of-area coverage; and
The locus of administration within each area.

The target level

The setting of the target will be all-important to the physicians affected, because its level determines the amount of the reward or penalty. A reasonable initial approach is to use historical rates of increase in expenditures, adjusted for changes in overall rates of inflation and in the number and age composition of beneficiaries within the area. Thus, the target would intentionally not be difficult to meet, and both the program and physicians can anticipate benefiting from the changes in practice patterns that the incentives are intended to generate. Historically, even after adjusting for the aging of the population, the rate of increase in medicare expenditures had been several percentage points higher than the increases in the cost of living, the gross national product, or other aggregate measure of the economy. Over time, if the area-wide incentives are successful, the differential will narrow, and this narrowing will be reflected in projections that are made in future years.

In the long run, the target need not reflect historical increases. It could, for example, be allowed to increase at a rate that reflects cost of living and demographic changes as well as a factor to reflect desired increases in intensity of services. Importantly, the year-to-year increases in the target can be used to narrow the wide geographic expenditure differentials, with low-expenditure communities being allowed a greater rate of increase than high-expenditure-communities. Walter McClure, president of the Center for Policy Studies in Minneapolis, analyzed per beneficiary medicare expenditures in 26 representative SMSA's.[12] He found that in 1978 these expenditures—adjusted for age, sex, and area wages—ranged from less than $700 in the Peoria, Tacoma, and Seattle SMSA's to $1,574 in Miami. These broad ranges raise pressing issues of both efficiency and equity that area-wide incentives can begin to address.[13]

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[12] Unpublished data; private communication from Walter McClure.

The reward/penalty structure

The most obvious reward and penalty structure would have the physicians within an area share a predetermined percent of the variance, whether positive or negative, possibly up to a maximum. Alternatively, the program could have a reward structure only, that is, physicians would receive bonuses if there was a positive variance but would not be penalized in the event of a negative variance. However, the long-term intent of the proposal is to discipline the fee-for-service system, and both rewards and penalties would seem appropriate. These need not be symmetric. For example, physicians might receive 20 percent of a positive variance (savings) but be penalized for 10 percent of a negative variance (potentially up to some predetermined maximum). In addition, some mechanism would be necessary to collect payment from physicians should a negative variance occur. Independent Practice Association (IPA) HMO's typically withhold a portion of the fees and pay it out at the end of the year if budget targets are met.

One problem with a nonsymmetric structure is the potential for an adverse budget impact due to random fluctuations. HCFA staff estimate that, currently, between 10 and 20 percent of all PSRO areas witness either a year-to-year decrease or increase in hospital utilization of 5 percent or more. In the extreme, if physicians who face a nonsymmetric incentive structure ignore the incentives altogether and do no change their practice patterns, program costs will increase as a result of random fluctuations that result in bonuses exceeding penalties.

Formula for distributing bonuses or penalties to individual physicians

One possible formula would distribute bonuses in proportion to services rendered, the approach adopted by most IPA's. Although this formula may reasonably reflect relative effort, it has the disadvantage of encouraging excess services. Thus, the financial incentives on the IPA are collective, or group, incentives that are not internalized at the level of the individual practitioner. As a result, IPA's generally find that they must achieve their cost savings primarily through administrative controls and educational efforts rather than through financial incentives for individual practitioners. Physicians in an area might also be encouraged to propose their own distribution formula.

Obtaining the data to measure variances

A generic problem in implementing new policies is the availability of data to support them. Although I have not analyzed the issue in detail, I suspect that the data problems are probably less than those required to implement: First, the new hospital prospective payment system, which requires that each hospital accurately code diagnosis, or second, the new competitive medical plan, or HMO, provisions, which require that beneficiary health status be accurately reflected in the amounts paid to participating plans. It should also be realized that an estimate of prior year performance can be made quite accurately prior to all bills or claims being submitted. An internal HCFA document describes some of data available thusly:

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[13] Another, narrower, approach would be to vary the hospital prospective payment amounts to reflect admission rates in the community.

> Inpatient hospital days of care per 1,000 medicare beneficiaries adjusted to reflect the population-at-risk (are available). This kind of data is generated on an ongoing basis for PSRO areas and can be generated for Health Service Areas (HSAs) and for counties. Furthermore, this kind of data is capable of being generated rapidly, so that the respondent can receive timely feedback regarding trends in hospital utilization.
>
> Medicare Part A data on charges and costs can be generated. Part A costs are subject to a time lag of approximately 7 months due to the time required to calculate the reasonable costs from the submitted charges. In order to provide short-term trend information, data on Part A charges may be useful and can be generated fairly rapidly. This data is available through the HCFA Central Office.
>
> Medicare Part B charges can be abstracted from payment records. Payment records can be retrieved through the HCFA Central Office, although they are generated on an ongoing basis by the carrier. They are subject to certain limitations. The payment record does not identify the practice site of the physician, nor does it identify all procedures. However, the payment records can be sorted based on county of residence of the beneficiary. Where areas are defined with low levels of migration, the Part B payment record can be used as a gauge of utilization and cost of ancillary services. While there is a significant time lag in obtaining 100 percent of Part B costs through payment records, three months after the close of an accounting year about 90 percent of payment records can be retrieved. Further, one can project a precise estimate of Part B costs, taking into account previous years' experience in the area in timeliness of submission of Part B claims.

Designation of geographic areas

Market areas can be difficult to define, particularly in large metropolitan areas. Not only do analytic issues arise, but also the process inevitably becomes politicized to some degree, as evidenced by the experiences of HHS in drawing boundaries for both health systems agencies under the health planning legislation and for the PSRO's. However, some large IPA's have assigned their physicians to regions in order to create management units and incentive pools that are more localized than the plan as a whole. The results have apparently been successful, even with an imperfect boundary designation process. However, even the largest IPA has fewer physicians as members than would most geographic areas under this proposal. Furthermore, the drawing of boundaries is likely to be particularly thorny if the area-wide incentives are to be adjusted to narrow some of the existing regional expenditure disparaties because physicians will prefer to be in the area that is allowed the higher rate of increase.

Cross boundary flow

Inevitably, some beneficiaries will receive services outside of their areas of residence. The severity of the problem would need to be analyzed; we presume that the proportion of services received outside of the area of residence to be small, although it could be large in some communities, such as those having a high number of elderly who reside temporarily during certain seasons of the year.

Locus of administration

The question of who should implement the program in each area will need to be addressed. The most logical organization is the PRO. Alternatively, physicians could work with the medicare fiscal intermediaries, who might also share in the risk or could form their own organization independent of the PRO or the intermediary. The incentives will be in effect regardless of whether physicians cooperate, and physicians will have good reasons to work with an existing organizational structure, or form one anew, without prodding from the Federal Government.

CONCLUSION

Area-wide incentives raise two principal sets of issues relating to: One, the likelihood that the incentives will, in fact, work and two, problems of implementation and administration. Several concerns regarding the incentives can be noted. First, they are group, or collective, incentives—that is, they apply to all physicians in the area rather than reflecting the practice pattern of individual physicians—and there is no easy or obvious way of creating incentives for individuals. Second, medicare patients constitute a minority of patients of the typical physician, albeit a large minority, and there is always some question regarding whether physicians will change their behavior unless the incentives are changed for their practice as a whole. Specifically, medicare payments for physician services amounted to 17.5 percent of all payments nationally in 1981, although the number of medicare beneficiaries accounts for almost twice that percent. This percentage could be increased if the approach encompassed medicaid or even private funding. Third, physicians cannot be excluded from the program other than through existing medicare procedures that make ineligible those physicians who engage in fraudulent or abusive practices.

IPA's face the first two concerns and, again, their experience is instructive. With regard to the first concern, most IPA's do achieve savings, despite the collective nature of the incentives to individual physicians. As illustration, the 1980 National HMO Census reports that the average hospital utilization rate is 491 days of care per 1,000 enrollees for IPA's, compared with 725 for Blue Cross/Blue Shield.[14] IPA's face the same problem of individualizing incentives. However, the area-wide approach would create a collective incentive on a broader scale.

With regard to the second concern, the proportion of the patients of IPA physicians who are prepaid is typically far below the proportion that are medicare-eligible, yet most IPA's are successful.

The third concern does not have a parallel in the IPA, which can remove physicians from the program. In reality, few physicians are ever removed, although the threat is always present. Thus, area-wide incentives depend heavily on peer pressure.

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[14] Group model HMO's had an average of 402, and staff model HMO's, 418 days of care per 1,000 enrollees. Thus, IPA's do not, achieve the same level of efficiency as group or staff model HMO's. See U.S. Department of Health and Human Services, Office of Health Maintenance Organizations, "National HMO Census of Prepaid Plans" (Washington, D.C.: U.S. Government Printing Office, 1980).

Administrative issues, some of which have already been cited, include that of boundary designation, the need to generate mechanisms for physicians to work together where such mechanisms do not already exist, the need for improved data systems, and the mechanics as well as the formula for distributing bonuses or collecting penalty payments. One important element of administrative simplicity will, however, be introduced—the Federal Government will no longer need to issue detailed regulations and instructions governing how PRO's should function. Instead, they will, for the first time, have the incentive to perform effectively.

Finally, the potential for adverse impact on the beneficiary must be considered. In theory, the beneficiary might not even know that physicians face a new set of incentives. One concern is that physicians who do not accept assignment will extra bill patients in anticipation of facing penalties. This concern, however real, must be addressed in relative rather than absolute terms, that is, whether beneficiaries would be hurt more through the proposed approach than through other measures. If current practice patterns of physicians are allowed to persist, the changes in the program are likely to be much more harmful to beneficiaries.

The approach might best be tested initially through a series of large-scale demonstrations, which would generate information on the impact and allow administrative and technical problems to be worked out. The target could be the estimated total expenditures for the subsequent year, perhaps with retrospectively calculated correction factors for certain unforeseen events, for example, inflation in the general economy being significantly higher or lower than projected. A logical place to start might be in a handful of areas with successful PRO's. The PRO's have been established specifically to assess the appropriateness of care provided medicare and medicaid beneficiaries. As such, they offer both a data base on utilization and a formal organization of physicians who are accustomed to collaborating, albeit not at the level of intensity that this proposal envisages.

The demonstrations could be conducted under current law if there were only positive incentives, that is, there were no penalties in the event the target was exceeded. For example, they might receive 20 percent of any positive variance. Restricting the demonstrations to positive incentives will induce greater physician cooperation. Alternatively, legislation could be enacted that had a phase-in period that included demonstrations.

USING COVERAGE POLICY TO CONTAIN MEDICARE COSTS

(*By* H. DAVID BANTA, M.D., GLORIA RUBY, *and* ANNE KESSELMAN BURNS)

The purpose of this paper is to describe some possibilities of using a more explicit approach to medical technology as a mechanism for containing costs in the medicare program. Medical technology has now been widely recognized as a key contributor to health care costs, with estimates roughly up to 50 percent as technology's contribution to hospital cost increases (Freeland and Schendler, 1983, found 41 percent; Waldman, 1972; Worthington, 1975; Feldstein and Taylor, 1977; Altman and Wallach, 1979).

These estimates assume a broad definition of medical technology. OTA has defined medical technology as the drugs, devices, and medical and surgical procedures used in medical care, and the organizational and supportive systems in which they are provided. In this paper, we will concentrate on the clinical technologies.

Few would doubt that most medical technologies are beneficial. During the past few decades, medicine has been transformed by an influx of exciting new technologies. People who would have died in previous generations now live with a reasonable ability to function normally. For example, before renal dialysis was introduced beginning about 1960, those with end-stage renal disease died. Cardiac pacemakers have essentially made deaths from irregularities of heart rhythm unnecessary. Transplantation of organs such as the kidney and the heart have extended life for thousands. And new technologies such as hip joint replacements have made pain-free functioning possible for thousands of elderly people. Thus, while technology is unquestionably expensive, it is not a matter merely of removing the inefficacious from the system.

At the same time, there is considerable waste in the present system that is attributable to the inappropriate use of technology. Many surgical procedures seem to be overused in this country compared to other countries. Laboratory examinations and other diagnostic tests are used at high rates and, at time, when not indicated by the suspected conditions (Schroeder et al., 1973; Dixon and Laszlo, 1974; Fineberg, 1977). Lengths of stay in hospitals are higher in many cases than can be justified by medical evidence of benefit (OTA, LOS, 1983). In brief, the system has encouraged the use of technology when any benefit, no matter how small, could be hoped for. The challenge for the future is to devise a system that encourages the cost-effective use of technology.

These comments have focused on the relationships between medical technology and the health care system. As a significant component of the general system, the medicare program warrants specific attention. First, medicare costs have risen faster than those of the system as a whole. Between 1980 and 1981, for example, medicare program expenditures rose 17.9 percent, while national health care expenditures rose 15.1 percent (Health USA, 1982, tables 71 and 82). Second, since the hospital is the focal point for many technologies and medicare is a relatively generous payor of hospital costs and less so for out-of-hospital costs, medicare would be expected to be very involved in medical technology. Finally, elderly people tend to have chronic medical conditions and they are heavy users of medical technology such as intensive care units and coronary bypass surgery. In 1980, for example, about 18 percent of medicare hospital stays involved intensive or coronary care units (Berenson, 1983). While relatively little is known in specific terms about medical technology in the medicare program, it is known that 28 percent of all medicare costs go toward the last year of life of the beneficiaries (Lubitz, HCFA, 1983). This seems to indicate that terminal illness is a major expense for the program, and that life-supporting technology is an important contributor to costs.

DIFFUSION OF MEDICAL TECHNOLOGY

Medical technology develops in a myriad of ways in many different sites with a variety of sources of funding. The Government funds most basic biomedical research in this country, but private industry funds a substantial portion of applied research and technology development. Processes of development of technology have been little studied. However, since much modern technology is made up of combinations of medical devices, drugs, and human skills, their development is very complex. Control of development has proven to be difficult.

When the technology has been developed, it must come into use. The process of spread into use is called diffusion. Because of the difficulties of identifying new technology before it is introduced into widespread use, policy mechanisms have tended to focus on early diffusion, or adoption, of new technology. Thus, the Food and Drug Administration regulates all new drugs and medical devices for safety and efficacy. The health planning program requires certificate-of-need approval for institutions to make capital investments.

Factors leading to the widespread use of technology are many. However, little research has been done on manipulable factors, but has tended to concentrate on such factors as hospital size, which is difficult to influence. Only recently have researchers recognized the importance of reimbursement in the spread of new technology. Recent evidence shows that the methods of payment is an important factor. And since it can be altered relatively easily, it has come to be seen as the policy mechanism of most promise for controlling medical technology. At the same time, the payment system is seen as an effective way to control costs. The point is that controlling costs means controlling technology, and the reverse is also likely true.

MEDICAL TECHNOLOGY IN THE MEDICARE PROGRAM

The benefits in the medicare program are usually broad, general categories, rather than specific technologies. Part A covers hospitalization, psychiatric hospitalization, home health care, and posthospital extended care services. Part B covers medically necessary physician services, outpatient hospital services, home health care, outpatient physicial therapy and speech pathology services, independent laboratory services, some ambulance transportation, most prosthetic devices, drugs that must be professionally administered, blood, and some medical supplies.

Because benefits are in such broad categories, specific technologies have required individual coverage decisions. Coverage policy governs the eligibility of technologies for payment. In the past few years, rapid technological change has led to increasing needs for technology-specific decisions. At the same time, evaluating the health benefits and risks of specific technologies has become a formal part of the process of arriving at coverage decisions.

Coverage is generally defined as the guarantee against specific losses provided under the terms of an insurance policy (Discursive Dictionary, 1976). It is frequently used interchangeably with benefits or protection. In the medicare program, coverage is distinguished from payment or reimbursement: coverage refers to the types of benefits available to eligible beneficiaries, and payment refers to the amount and methods of payment for covered services (Young, p.c., 1982).

The basis of coverage policy for particular technologies not mandated by medicare is section 1862 of title XVIII of the Social Security Act, which excludes payment for items and services that are not reasonable and necessary for diagnosis, treatment or improved services. That section has traditionally been implemented with attention to the medicare goals of not interfering with the practice of medicine and of assuring beneficiaries the choice of providers.

Coverage decisions are made at the national level by the central Health Care Financing Administration (HCFA) office. They are also made by medicare contractors, called intermediaries (part A) and carriers (part B), who perform the medicare program's claims processing and payment function under HCFA's guidance.

Because of the general language of section 1862 and the absence of regulations or specific guidelines to implement that section, HCFA officials and medicare contractors have considerable latitude in determining which technologies are to be covered. Coverage decisions are developed and implemented in a decentralized manner. Moreover, there is wide variation among contractors in a number of areas: One, their identification of uncovered technologies; two, the decisions they make concerning the coverage of specific technologies; and three, their implementation of coverage decisions (OTA, 1980; Bunker et al., 1982; Demlo et al., 1983) Much of the variation is due to absence of a precise definition of the term reasonable and necessary. The criteria used by HCFA to determine is a technology meets this test are: One, efficacy and safety generally accepted; two, not experimental; three medically necessary for the individual case; and four, provided according to accepted standards of medical practice in an appropriate setting. It is worth noting the cost is neither a criterion nor an explicit issue in these criteria.

There is a basic contradiction in medicare's goal of not interfering with the practice of medicine and its coverage policy that judges technologies used in medical practice. The decentralized approach ameliorates the contradiction in its de facto acception of the premise that medical practice varies from one geographic area to another.

In addition to not using costs as a criteria, medicare has refrained from limiting technologies to restricted circumstances, such as certain institutions meeting certain criteria or physicians with specific skills.[1] On the other hand, medicare does limit coverage of some technologies to appropriate medical conditions. For example, in 1981, HCFA announced the coverage of specific types of therapeutic apheresis for three conditions, but denied coverage for other indications. Three additional disease indications were added in 1983 (OTA, Apheresis, 1983).

The recently passed DRG program can be expected to change the coverage process to an extent, but perhaps not dramatically. Indeed, the interactions between medicare coverage policy and DRG payment are limited to inpatient service provided in almost all short-term acute care general hospitals. Inpatient services in psychiatric, rehabilitative, pediatric, and long-term hospitals; outpatient services; and physician services—provided in or out of the hospital—are not included in the DRG payment system. Instead, they are paid for as before the law's enactment.

Most coverage questions arise with physician services. This is understandable, because technologies are generally provided by physicians. Furthermore, the physician services component of medicare is the fastest growing, although not the largest, in terms of costs. Since the DRG program changes the incentive for hospitals dramatically, future changes in medicare are expected to foucs more on physician services and outpatient services. For these reasons, the suggestions for changes made in this paper will address physician services. (See later section in DRG's.)

HOW COVERAGE DECISIONS ARE MADE

The coverage decision process is conceptually simple. Although the specifics vary, the process is the same at the national level and at the contractor level. First, new technologies and new uses of covered technologies are identified. Then, the decision is made as to whether or not to cover the identified technology. Generally, the decisionmakers receive advice that usually involves an evaluation of the technology focusing on efficacy and safety. The final step is implementation of the coverage decision.

Identification

Technologies can be identified by HCFA, by the HCFA regional offices, or by contractors. They are identified by different methods, including: reviewing claims, auditing cost reports, informal interacting with providers, and receiving inquiries from such sources as manufacturers. In the past few years, HCFA has relied more on contractors' knowledge and experience, assuming that contractors are more familiar with medical and hospital practice.

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[1] In July 1983, HCFA released coverage instruction to medicare contractors that for the first time limit payment for a technology to its use in a specific setting and by specific providers. Closed loop blood glucose control devices will be paid for only if used in a hospital inpatient setting under the direction of specially trained medical personnel for insulin dependent diabetes during crisis intervention (Medicare Manual Part 3, July 1983).

However, although contractors do identify any uncovered technologies, this process has serious flaws. Hospital claim forms in particular are not designed to identify new technologies. They use broad headings, such as radiology and pathology, that provide little information about specific technologies (Schaeffer, 1982). Intermediaries are required to examine only a 20-percent sample of inpatient claim forms (HCFA memo, 1981). The claim form for physicians requires information about the use of specific surgical and medical technologies, but carriers may still overlook new technologies and new uses of covered technologies because of administrative inefficiencies and a high number of coding errors (Bunker, 1982). It is also easy for physicians and hospital administrators to request payment for an uncovered technology under an established code. For example, chemonucleolysis (injection of chymopapain into a ruptured intervertebral disc) is not a covered benefit of Blue Shield of California, by discography is covered. The claim for the services of the physician may list the procedure number for discography injections, when claiming reimbursement for chemonucleolysis (Bunker, 1982).

Based on advice provided by their medical advisers, medicare contractors make their own coverage decisions about the majority of new services they identify. When they feel unable to decide on coverage, the question is submitted to a HCFA regional office. For the most part, regional offices refer coverage questions requiring medical decisions to the HCFA central office. Only the Boston regional office has a medical consultant.

Prior to 1979, the majority of coverage questions received at the central HCFA office were submitted by the regional offices. However, since 1979 others, particularly manufactures, have increased their participation in the coverage process. During 1981, 25 percent of coverage questions submitted to the central HCFA office were from producers of medica technologies (OTA, draft, 1983). Manufactures are very concerned to know as early as possible whether their new products will be covered. In the past year, the national association that represents manufacturers of medical devices, the Health Industry Manufacturers Association (HIMA), advised its members to request coverage for their products from medicare contractors and not the HCFA central office for more timely and favorable decisions (HIMA, p.c., 1983). This change in HIMA's strategy was prompted by its perception that not only had the time required for reaching and releasing coverage decisions made at the national level increased, but the number of products being denied coverage also increased.

Coverage decisions

Coverage decisions are made by medicare contractors and by HCFA. The contractors act upon most questions raised in their areas, following the advice of medical consultants. Contractors show variation in their decisions about specific technologies (Demlo, 1983). As a result, the specific package of covered benefits varies somewhat across the country and even within regions. There is no regional or national standard for covered services.

HCFA expects contractors to refer general coverage issues of national interest to the central office (HCFA Discussion Draft, 1981).

However, referral is not required by statute or regulation. Furthermore, there is no accounting of contractors' adherence to this suggestion.

The locus for coverage decisions within HCFA is the office of coverage policy. If the coverage decision concerns drugs or some medical devices, prior evaluations by the Food and Drug Administration provide some indications of safety and efficacy. There is, however, no comparable mechanism for medical and surgical procedures. FDA evaluations are not definitive either, since the standard for efficacy is that the drug or device have the effects claimed by the manufacturer. HCFA judges efficacy as the ability to improve health.

If medical advice is required for a coverage decision, the question is presented to the physicians panel within HCFA. The panel may request an evaluation from the Office of Health Technology Assessment (OHTA), the successor to the National Center for Health Care Technology, disbanded in 1981. After conducting an assessment on the safety, efficacy, and clinical effectiveness of a technology, OHTA may recommend that a technology not be covered by medicare, or that it be covered with or without restrictions. The actual coverage decision is made by HCFA, which notifies HCFA contractors and State medicaid agencies.

Coverage decisions about technologies of national interest are especially based on criteria of general acceptance and stage of development. These call for judgments that are difficult to base on good information. The terms are not defined, and do not fit well with the complexity of any technology's development.

Implementation of coverage decisions

For the most part, HCFA's implementation of national coverage decisions consists of disseminating the decision through various sources, including HCFA's regional offices, instruction manuals, and transmittal letters, to contractors and providers. Monitoring the implementation is largely decentralized and done by claims review; direct Government involvement is largely confined to cases of fraud and abuse.

The limitations of claims review in identifying new technologies also apply to claims review as a means of evaluating the implementation of coverage decisions. The capability of monitoring a coverage decision varies among contractors. It varies in part because of the complexity of medicare coverage rules and deficiencies in the transmittal of information between HCFA's central office and regional offices and between regional offices and medicare contractors (Demlo, et al., 1983). As a result, the actual package of services under medicare may vary greatly in different regions of the country.

COVERAGE POLICY UNDER DRG HOSPITAL PAYMENT

While no changes have yet been announced in coverage policy under the DRG program, there will clearly be an interaction. Both DRG payment and coverage policy can affect the rate and direction of technological change, and together they have great implications for medical technology in the medicare program.

Because specific technologies used in hospital settings are not easily evident from the DRG classification, HCFA will not be able to discern the use of some technologies that are unsafe, not efficacious or experimental. This will be similar to the situation under the previous cost-based mode of hospital payment. However, some DRG's are based on specific technologies, in particular a number that are specific surgical procedures. Those DRG's will allow for improved identification.

Perhaps more important is the different incentives under the DRG payment system. Once can expect that the use of procedures that lower the cost per case to increase, and those that raise the cost to diminish. Those that raise the cost may lead to appeals from hospitals as outlier cases, many of which will be high-cost outliers precisely because of costly technology.

Finally, new technologies will be recognized during the process of adjusting DRG rates. Indeed, updating DRG prices appears to offer the most significant opportunity of identifying such technologies for coverage purposes.

For the DRG payment system, changes in DRG relative weights or prices will be made, in part, to reflect technological change. Because this process must include identification of new technologies, it is reasonable that some of the techniques, including technology assessments, used to adjust DRG rates will be similar to those used to support coverage decisions. For example, the Prospective Payment Assessment Commission (ProPAC) has been given broad authority to assess medical technology and the appropriateness of medical practice patterns in developing its recommendations for DRG rates. The Commission's role, however, is only advisory; HCFA makes the decision concerning the appropriate payment rate for hospital services.

Thus, both the coverage process and the process of adjusting DRG rates share a similar approval for payment function. The most important difference is that the DRG rate adjustment process includes issues of cost as an integral issue.

Another issue arises because medicare pays hospitals one way and other providers another, and because coverage cannot be limited to payment for specific technologies to their use in certain settings and by certain providers. Since costs are a consideration to providing inpatient hospital services under the medicare DRG payment system and not a large consideration in providing other services in other settings, the incentive to shift high-cost technologies from an inpatient to an ambulatory setting is a large one.

FACTORS IN EVALUATING TECHNOLOGIES FOR COVERAGE DECISIONS

As described above, the prime factors used by HCFA in evaluating coverage include efficacy and safety. However, even this level of evaluation is not simple. Data on efficacy and safety is often not available in general, but is even more difficult to obtain for new technologies. Despite increasing attention to coverage issues, no mechanism has been developed to assure that studies are done in such a way as to produce data when it is needed for decisionmaking.

Theoretically, at least, substitutability is an important issue for the medicare program. Often one technology addressed to a specific disease problem is much cheaper than another. The extent to which two technologies are equivalent is the issue. The program could save quite a lot of money if more about equivalence were known. However, data on equivalence is even more scarce than data on efficacy. Clinical trials are usually not organized in such a way to address this issue. Also, the present statute may not give the program authority to exclude a technology on the basis that alternatives are available. This depends, of course, on the definition of reasonable and necessary.

A related issue is that of costs. The program has seldom explicitly considered costs. Although the issue of including cost criteria into coverage decisions has been examined by the General Counsel's office, it has never been resolved (Streimer, p.c. 1983). At this time, there is no restriction on using cost criteria on coverage decisions, but HCFA chooses not to do so. Nonetheless, there has been a great deal of discussion in recent years about including costs as a criterion. If this were done, either by statute or regulation, the issue would, in effect, become cost-effectiveness. There is a family of techniques for assessing cost-effectiveness that have gained prominence in recent years and that could be helpful. However, these techniques also have significant weaknesses. Some of these weaknesses can be ameliorated with time, such as the lack of efficacy data on which to base cost-effectivenss calculations. Others cannot, however. For example, cost-effectiveness analysis focuses on factors that can be quantitated, such as death and financial cost, while tending to ignore nonquantitative factors, such as ethics and equity. In effect, this weakness means that cost-effectiveness analysis cannot in most cases be the dominant factor in a decision. However, it can be very helpful in assisting the policymaker in structuring a problem and understanding its ramifications.

Running through the issue of coverage decisions is the problem of data. Coverage decisions must be made rationally to be respected by the outside world. Providing technologies inappropriately can cause quite a lot of harm, as can withholding efficacious technologies. Yet there is a scarcity of data on which to perform assessments or to base such decisions. In addition, it is widely recognized that HCFA does not have the resources necessary to understand the role of new technology in its program. While recent years have seen active policy debates concerning technology and "technology assessment," investments in data collection have fallen. Without more data, coverage decisions probably cannot be improved or tightened.

AREAS FOR CHANGE IN MEDICARE COVERAGE POLICY

In the past, coverage policy in the medicare program has had important potential, but limited opportunity for attempting to assure cost-effective health care. Coverage policy has been an important tool in protecting beneficiaries from unsafe and inefficacious medical technology. But, it has been restricted in influencing the diffusion of cost-effective technology due to the exclusion of cost criteria in the assessment of technologies for coverage decisions and by inadequacies in the coverage process. Despite the enactment of the DRG payment method for inpatient hospital services, the importance of coverage policy is only marginally diminshed. Coverage decisions deal primarily with physician services, and physician payment has not been changed—not yet. In addition, the DRG program requires coverage decisions in effect, especially in establishing new DRG's (such as those for new surgical procedures).

An obvious change to consider is to broaden the legal basis for coverage. As mentioned above, reasonable and necessary has not been formally defined. It may be that costs and broader social issues could be included in the definition if it were made by regulation. It not, or if the administration is not interested in pursuing such a change, the law could be amended to specify such factors as worthy of concern. Indeed, it seems rather absurd that the medicare program cannot consider financial cost, but must apparently pay for any technology found to be efficacious and safe, regardless of how much it costs.

Another change to consider is to allow limitations in coverage to certain types of providers, certain types of sites, or even specific sites.[2] Such limitations could both help control costs and improve quality. For example, many surgical procedures are done in low volume in hospitals in this country, and the results (such as death rates) have repeatedly been shown to be inferior in such setting (ref). It may also be that excessive or unnecessary procedures are done in institutions with low volumes. This change could possibly also be made in regulation, but may require statutory change. Such a change seems clearly to be advantageous to both patients and the program itself, although not to some physicians and hospitals.

A combination of policies that includes limiting diffusion of technology to certain providers, limiting utilization to certain indications, and limiting payment in other ways, could undoubtedly reduce the rates of use of certain technologies. This is indicated by the large variations in use of technologies. The greatest one area in which savings could be obtained is that of length of hospital stay (LOS). Average LOS varies from 6.1 days in the West to 8.4 days in the East (OTA, LOS, 1983). OTA recented completed a review of this subject which concluded that there is no scientific data to support longer lengths of stay; to the extent that data exist, they tend to support shorter lengths of stay. Another expensive area is that of surgical procedures. Wennberg and his colleagues (McPherson et al., 1982) have studied the variation in use of certain surgical procedures between different areas of the United States and between different countries. As shown in the table, the United States has age-adjusted rates of use of common surgical procedures that range as high as 4.57 times as high in New England as in the West Midlands of England. Laboratory testing is another area with considerable data to suggest that many tests are done which are of essentially no value to the patient.

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[2] As noted previously, in July of 1983 HCFA issued coverage instructions that for the first time limited the coverage of a technology (closed loop blood control device) to its use in a specific setting and by specific providers. If such limited types of coverage becomes established policy, the issue to be discussed becomes academic. However, indications are that this decision does not represent a major change in policy.

At present the medicare program cannot demand data from providers. A change in the law could allow coverage only on the basis that such data would be furnished. The DRG amendments do give HCFA the authority for the first time to fund clinical research, including clinical trials. This further change would give medicare some powerful tools to develop data for providing cost-effective care.

Finally, the interface between coverage policy and DRG payment needs to be explored more thoroughly. The Office of Health Technology Assessment (OHTA) is presently limited to responding to requests from HCFA for technology assessments. In part because of questions about its eventual role, it has not developed a comprehensive program for medical technology assessment and transfer. The Commission described previously will play an active role in this arena. The relationship between OHTA and the Commission is a critical one for coverage purposes.

Discussion

Attempts to control technology and thereby control costs have until now been rather ineffective. In large part, it seems to us, this is because the forces of the health care system run in the opposite direction. Investments in developing new technology are large, and industry has many tools for convincing providers that new technologies are essential for good patient care. New technology is often exciting, and does indeed often offer incremental improvements in health status for sick people. Technological procedures are associated with higher fees for physicians, and new technological procedures have even higher fees. Hospitals also are paid more for technological services than for cognitive ones. The prevailing fee-for-service system of physician payment and cost-reimbursement payment to hospitals are inherently inflationary, with strong incentives to buy and provide more. The new DRG system is a first step to change this last factor. However, it is not surprising that attempts so far have foundered, when so many forces have pointed in the other direction.

An important issue for the future is the extent to which changes in the medicare program can change the entire system. If medicare does not provide a technology but it is widely available to those not enrolled in the program, strong political pressures mount for coverage. The hearings held on transplantation (primarily liver) in the spring of 1983 provide a good example. In those situations, it is not surprising that HCFA officials have been rather conservative about denying coverage.

TABLE 1.—AGE AND SEX STANDARDISED SURGICAL RATES IN THREE NEW ENGLAND STATES, SOUTHERN NORWAY AND WEST MIDLANDS REGIONAL HEALTH AUTHORITY, RATES PER 100,000 POPULATION [1]

	New England	S. Norway	W. Midlands	Ratios: New England to Norway	Ratios: New England to West Midlands	Ratios: Norway to West Midlands
Hernia	276	186	89	1.48	3.10	2.09
Appendectomy	128	150	138	.85	.93	1.08
Cholecystectomy	238	86	63	2.77	3.78	1.37
Prostatectomy	264	118	58	2.24	4.55	2.03
Hysterectomy	540	118	202	4.57	2.67	.58
Haemorrhoidectomy	76	45	13	1.69	5.85	3.46
Tonsillectomy	289	64	154	4.52	1.88	.42

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[1] Rates for appropriate sex for hysterectomies and prostatectomies.

To be most effective, the coverage process needs to be capable of identifying all the new technologies introduced into the system and paid for by the medicare program, as well as those covered technologies which are unproven as safe and effective. Coverage would be even more effective if HCFA became aware of new technologies and new uses for established technologies before questions of coverage were raised. For example, HCFA could monitor FDA's processes to anticipate new medical devices. The National Center for Health Care Technology had this task as part of its charge. Similar efforts in the private sector could be scrutinized. After identification, all technologies of national interest could be carefully evaluated in a process using objective criteria performed without undue delay. The current process is far from this model.

Tightening this system would undoubtedly save money for the program, and might also improve quality of care. However, it would not be politically popular. In addition, many would have reservations about centralizing decisions concerning health and disease and having them made by HCFA bureaucrats. Such a change would require the following actions:

(1) Restructuring the coverage process to encourage the identification of all new or emerging technologies.

(2) Referring all coverage issues of national interest to the HCFA central office.

(3) Uniformly implementing all national coverage decisions.

(4) More explicitly considering costs in coverage decisions.

(5) Limiting coverage of certain technologies to specific providers and specific sites of care.

As cost containment becomes an increasingly important objective of the medicare program, the notion of linking coverage policy and technology assessments to change economic incentives in the program has gained momentum. A real possibility would be to deny coverage until good data were available. This method is being used formally in the unique case of heart transplants, where the decision will not be made until after completion of a large study being carried out by the Batelle Institute. Including costs and other factors, such as limiting coverage to the most effective site for carrying out a procedure, would assist in this goal.

Coverage policy is also related to utilization review. One of the purposes of utilization review is to assure that services given are covered. According to the Social Security Amendments of 1983, the new peer review organizations (PRO's) will review the validity of diagnostic information provided by hospitals (DRG verification); completeness, adequacy, and quality of care provided to inpatients; and appropriateness of admissions and discharge. Since the incentives in the DRG system are generally to provide fewer services, PRO's will need to be concerned with underprovision of services. Thus, utilization review and coverage policy support each other.

In the realm of physician services, changes in payment methods seem inevitable. One change that would not require sweeping change in the program is to build a fee schedule on a technology-by-technology basis. If the fee schedule were to pay for groups of services or on a per case basis as the DRG system does, individual technologies would not be apparent to HCFA and the coverage process would not be pertinent. New and expensive technologies would be assessed, however, when fees were adjusted. Specific fees for technological services, however, would allow more scope for the coverage process and would also make cost evaluations very important. A coordinated effort for assessing technologies for coverage and for adjusting rates would need to be established.

What is the potential for coverage policy to help contain costs in the medicare program? There is little doubt that large savings could be made, assuming that political and technical problems preventing a strong coverage policy could be overcome. A combination of policies suggested in this paper offer a possible approach. While no firm estimate can be made of potential savings, we believe that present expenditures in the medicare program could be reduced by more than 10 percent without affecting health status and without reducing access to needed services. The impetus for this estimate comes from the wide variations in technology use and the inadequacies of the current coverage process.

The closing thought for this paper concerns technology assessment. The tool of coverage policy is a toll aimed largely at technology. It requires good data and information to work well. In the DRG amendments, this fact was explicitly recognized by the Congress, which was concerned about the updating of DRG rates to allow incorporation of new technology (and perhaps to assure that obsolete technology was discarded by lowering rates). The tool devised was the Prospective Payment Assessment Commission which will assess DRG payment rates in association with the technologies that might be incorporated into those DRG's. This is the first explicit merging of costs and effectiveness in the medicare program. It offers an interesting precedent for the future.

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REFORMING MEDICARE: A NEW APPROACH TO FINANCING [*]

(*By* Karen Davis *and* Diane Rowland, *Johns Hopkins University*)

For 15 years the medicare program has operated with relatively little controversy—steadily paying the hospital and physician bills of millions of elderly and disabled Americans. It has won widespread support by relieving the financial burden of health care bills on the elderly and their families and by insuring financial access to hospital and physician services for many of the Nation's most vulnerable and critically ill citizens.

Yet, despite its noncontroversial past, the program is likely to come under intense scrutiny in the years ahead. The program spent $47 billion in 1982, up 17 percent over the previous year.[1] It is a major item in the Federal budget, accounting for $1 out of every $15 spent by the Federal Government and two-thirds of all Federal health outlays. Medicare outlays are expected to continue their upward spiral—reaching $112 billion by 1988.[2]

In response to the fiscal pressures faced by medicare, this paper examines a new approach to financing medicare. Under this approach, the hospital insurance (HI) and supplementary medical insurance (SMI) parts of medicare would be merged into a single program with integrated financing through a single medicare trust fund. Three sources of revenue would be used to finance the program: the existing payroll tax, general revenues, and a new premium administered through the income tax system. The mix of financing from payroll tax, general revenues, and premiums would be altered from the current mix, with greater reliance on an income-related premium and less reliance on the payroll tax.

I. Experience Under Medicare

The primary objective of medicare is to protect the aged and disabled against large medical outlays. The program also seeks to eliminate financial barriers that discourage the aged and disabled from seeking medical care. Medicare covers persons age 65 and over who are entitled to receive social security or railroad retirement benefits. As a result, about 97 percent of all aged persons are covered.[3] Beginning in July 1973 medicare coverage was also extended to individuals who have been permanently and totally disabled for 2 years or more and to persons with end-stage renal disease. In 1981, 29 million aged and disabled people, representing 12.4 percent of the U.S. population, were enrolled in medicare.

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[1] Office of Management and Budget, Budget of the U.S. Government, fiscal year 1984.

[2] Congressional Budget Office, Changing the Structure of Medicare Benefits: Issues and Options. Congress of the United States, (March 1983).

[3] Health Financing Administration, "Medicare Program Statistics, 1981," HCFA publication 03153, Baltimore, August 1983.

Medicare provides insurance coverage for acute medical care services. It consists of two parts: Hospital insurance (HI) or part A, and supplementary medical insurance (SMI) or part B. The HI program primarily covers short-stay hospital care, limited posthospital care in skilled nursing facilities, and home health services. The SMI program covers physician, outpatient hospital, home health, and some ambulatory services. Medicare does not cover prescription drugs, preventive services, dental care, routine eye examinations, eyeglasses, hearing aids, or long-term institutional services.

Hospital insurance coverage under medicare is automatic for all social security and railroad retirement beneficiaries. Those covered under HI may voluntarily enroll in SMI by paying a premium. The elderly ineligible for social security can purchase part A coverage under medicare directly at a rate currently set at $113 per month.[4]

The hospital insurance component of medicare is financed by a payroll tax of 2.6 percent of wages divided between employers and employees. Employers and employees covered by the program each contribute 1.3 percent of earnings up to a maximum of $35,700. The rate is scheduled to increase to 1.35 in 1985 and 1.45 in 1986.[5] Since 1966, this tax has been assessed in conjunction with the social security payroll tax, but the revenues for the medicare portion are part of a separately administered trust fund, the hospital insurance trust fund. Current law does not permit the use of general revenues if the HI trust fund balance falls below the level required to pay benefits.

Supplementary medical insurance is an optional insurance plan under medicare financed by general tax revenues and premium contributions. It requires a payment of a monthly premium by the medicare enrollee. The premium as of July 1983, was $13.50 per month, up from $3 in 1966 when the program began.[6] The premium covers about 25 percent of the SMI costs and the remainder is financed by general revenues. When medicare was enacted, it was intended that the SMI premium payments cover one-half the cost of SMI, but the share of costs paid by the premium has eroded over time as increases in program costs have outpaced premium increases for beneficiaries.

Not all people eligible for HI coverage elect to be covered for physician services under SMI. In 1982, 99 percent of the elderly purchased SMI coverage, but only 92 percent of the disabled enrolled.[7] The poor elderly and disabled are frequently enrolled for medicare SMI services by the State medicaid agency. Under this "buy-in" arrangement, the medicaid program pays the medicare

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[4] Congressional Budget Office, "Changing the Structure of Medicare Benefits: Issues and Options." Congress of the United States, (March 1983).

[5] Alice Rivlin, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[6] Committee on Ways and Means, "Background Material and Data on Major Programs Under the Jurisdiction of the Committee on Ways and Means," U.S. House of Representatives, February 1983.

[7] Congressional Budget Office, "Changing the Structure of Medicare Benefits: Issues and Options." Congress of the United States, (March 1983).

SMI premium for medicare eligible's with income below the State's medicaid income level.

Hospital insurance covers inpatient hospital care for 90 days of any illness—a new illness is defined to begin when the beneficiary has not been in a hospital or a nursing home for 60 continuous days—plus a 60 day lifetime reserve. The beneficiary pays a first-day deductible indexed to the cost of hospital care—$304 in 1983, up from $40 in 1966 when the program began.[8] In addition the beneficiary pays one-fourth of the deductible for the 61st through 90th day of hospital care, and one-half of the deductible for each day of the lifetime reserve. For skilled nursing home [SNF] care, the beneficiary pays a coinsurance charge which is set at one-eighth of the hospital deductible for the 21st through 100th days of care.

For physician services, the beneficiary is responsible for the first $75 of services, 20 percent of all medicare allowable charges, and any physicians' charges beyond those allowable by medicare. These cost-sharing requirements are in addition to the premium payments for SMI coverage and can result in substantial out-of-pocket expenditures for many beneficiaries.

II. PROBLEMS OF MEDICARE

Medicare program expenditures have risen rapidly over the last 15 years. Reimbursement for services increased from $4.7 billion in 1967, the first full year of program operation, to $40 billion in 1981.[9] Even after adjusting for the substantial increases in expenditures due to inflation during this period, medicare costs still went up 250 percent. The hospital insurance program was responsible for 68 percent of the growth in spending.[10]

Projections of medicare outlays and revenues indicate very large future deficits in the hospital insurance [HI] trust fund and rapidly rising requirements for the supplementary medical insurance [SMI] trust fund. At the same time, financial protection for the elderly and disabled beneficiaries of medicare is eroding as out-of-pocket expenditures for cost-sharing and uncovered services continued to grow. Thus, the medicare program is facing both a pending financing crisis and an increasing inability to protect the elderly and disabled beneficiaries against rising health care costs.

Medicare is also coming under increased scrutiny because of its impact on Federal spending and the national deficit. In 1982, medicare accounted for 7 percent of all Federal outlays. Spending under medicare increased at an annual rate of 17.7 percent from 1970 to 1982 and is projected to reach $112 billion by 1988.[11] The HI program is financed through the payroll tax, but the SMI program is financed by premium contributions and general revenues. The general revenues support of SMI has been increasing since the program's inception and represented 78 percent of the $17 billion in

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[8] Committee on Ways and Means, "Background Material and Data on Major Programs Under the Jurisdiction of the Committee on Ways and Means," U.S. House of Representatives, February 1983.

[9] HCFA Medicare Medicaid Data Book for 1981 and Medicare Statistics for 1981.

[10] Eugene S. Callender, "Medicare: Analysis and Recommendations For Reform," New York State Office on Aging, September 1983.

[11] Congressional Budget Office, Changing the Structure of Medicare Benefits: Issues and Options. Congress of the United States, (March 1983).

SMI spending in 1982.[12] As cuts are made in other components of domestic spending, medicare increasingly becomes a source for budget savings because of the size of its spending and magnitude of its annual increases. The impending deficit in the hospital insurance trust fund compounds the problem of rising expenditures and keeps medicare on the forefront of the political and health policy agenda.

Hospital insurance trust fund deficit

Projections for outlays and income for the HI trust fund show the balances in the HI trust fund will be depleted by 1988 and the fund will accumulate a deficit of $310 billion by 1995.[13] These dire predictions assume that the restrictions on the rate of growth in hospital payments under medicare enacted as part of the Tax Equity and Fiscal Responsibility Act [TEFRA] of 1982 will be continued beyond their scheduled expiration in 1986. If these limits are not continued or replaced with equally stringent controls in the DRG hospital payment system, the HI trust fund will be depleted in 1987 and accumulate a $400 billion deficit by 1995.[14]

The basic reason for the financial crisis in medicare HI trust fund is clearly rising hospital costs which drain the trust fund reserves. Hospital expenditures account for nearly 90 percent of all HI medicare spending. Hospital costs have been steadily increasing at rates exceeding inflation in the general economy. Cost escalation plus a growing number of elderly and disabled resulted in 18 to 20 percent annual increases in medicare hospital expenditures prior to enactment of the TEFRA limits in 1982.

Future trends suggest that the financial problems in medicare are chronic. The outlays of the HI trust fund are governed by hospital costs, but the trust fund's income is dependent upon the earnings to which the HI payroll tax is applied. Hospital costs have been increasing and are expected to continue to increase at a much faster rate than the wage base for the payroll tax. CBO estimates that hospital costs for medicare beneficiaries will increase at an annual rate of 13.2 percent from 1982 to 1995 while covered earnings are only projected to grow 6.8 percent annually.[15] The imbalances between the revenues derived from payroll tax contributions by employers and workers and medicare hospital expenditures cause the HI trust fund deficit.

The projected growth in hospital spending under medicare is primarily due to rising hospital costs rather than the aging of the population. The increase in the number of elderly eligible for medicare and the greater health care needs and utilization resulting from an older age distribution of medicare beneficiaries account for only 2.2 percentage points of the projected 13.2-percent increase in hospital expenditures between 1982 and 1995.[16] Hospital costs will account for 10.2 percentage points. Roughly half of the increase in hospital costs are a result of inflation in the general economy requiring hospitals to pay more for labor and supplies. The remainder of the hospital cost escalation can be attributed to increases in hospital admissions and volume of services for medicare beneficiaries and increased use of expensive, high technology procedures.

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[12] Carolyne K. Davis, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[13] Alice Rivlin, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[14] Congressional Budget Office, "Prospects for Medicare's Hospital Insurance Trust Fund" prepared for the Special Committee on Aging, U.S. Senate, March 1983.

[15] Congressional Budget Office, "Prospects for Medicare's Hospital Insurance Trust Fund," an information paper prepared for use by the Special Committee on Aging, U.S. Senate. March 1983.

The growth in payroll tax revenues to the HI trust fund is dependent on the performance of the general economy. The recent recession increased the speed with which the HI trust fund was being depleted. Each 1 percent increase in unemployment reduced the income to the HI trust fund by $1 billion in 1984.[17] The CBO projection of an average 6.8 percent growth rate in earnings assumes moderate growth for the economy in the next decade. A weak recovery or a worsening economy will exacerbate the HI financing problems by diminishing the earnings pool that is tapped to generate income to the trust fund. However, even a vibrant economy would not generate sufficient payroll tax income to match rising hospital expenditures.

The HI trust fund trustees estimate that the payroll tax rate would have to be increased to 4.3 percent to keep the fund solvent over the next 25 years.[18] The rate is currently scheduled to increase to 2.9 percent in 1986. Thus, the choices to keep the HI trust fund solvent for the next 25 years are to reduce the program by 33 percent, increase the HI payroll tax by 50 percent, or find additional revenue sources.

Rising costs for the SMI program

The supplementary medical insurance [SMI] trust fund does not face the same solvency problems as the HI trust fund because it has a more flexible financing structure. The SMI trust fund obtains funds from the premiums paid by beneficiaries and appropriations from Federal general revenues. The law requires that general revenues be appropriated to finance all benefit and administrative costs not covered by the income from premiums. Thus, the SMI program has more open-ended financing than its HI counterpart.

Although the SMI program faces no immediate funding crisis, its increasing outlays and growing reliance on general revenue financing are of concern. SMI outlays account for one-third of total medicare expenditures and are expected to increase by 16 percent per year through 1988.[19] Since the 1974 amendments to the Social Security Act limited SMI premium increases to the percentage increase in cash social security benefits, the share of SMI costs covered by premiums has steadily declined. In 1982, premium payments accounted for only 22 percent of SMI expenditures and general revenues paid 78 percent or $13.4 billion of the $17.2 billion in SMI spending.[20] As a result of recent legislative budget cuts, the premium will be set at a level that covers 25 percent of the incurred costs for 1983 through 1985. Unless the legislation is extended, the premium increases will again be tied to social security cost-of-living increases after 1985, renewing the trend toward greater reliance on general revenues to finance SMI.

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[16] Congressional Budget Office, "Prospects for Medicare's Hospital Insurance Trust Fund," an information paper prepared for use by the Special Committee on Aging, U.S. Senate. March 1983.

[17] Congressional Budget Office, "Prospects for Medicare's Hospital Insurance Trust Fund," an information paper prepared for use by the Special Committee on Aging, U.S. Senate. March 1983.

[18] Carolyne K. Davis, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[19] Alice Rivlin, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

The general revenue requirements of the SMI program contribute to the Federal deficit and limit the availability of Federal funds for other purposes. CBO estimates that Federal general revenues would have to increase by 17 percent per year to cover the projected rise in SMI outlays. This would result in an increase in SMI's share of total Federal general revenues from 3.7 to 5.7 percent. SMI outlays would have to be reduced by $27 billion from 1984 to 1988 to hold the share of general revenue financing going to SMI at 3.7 percent.[21]

Financial burden for medicare beneficiaries

Rising health care costs not only strain the fiscal resources of the medicare program, but also undermine the level of protection against medical expenses provided by medicare to the elderly and disabled. Many elderly and disabled beneficiaries already face serious financial burdens in meeting their health care expenses. In 1981, medicare met only 45 percent of all health expenditures of the elderly.[22]

Medicare beneficiaries incur large out-of-pocket expenditures for services not covered by medicare, such as prescription drugs, dental care, and nursing home care. In addition, medicare's deductibles, cost sharing, and SMI monthy premiums are not inconsequential. The aged spent an average of $1,154 per person privately on health care in 1981. If nursing home services are excluded, the elderly spent $834 or nearly 10 percent of their mean income on out-of-pocket health expenditures.[23]

Out-of-pocket spending by the elderly is expected to continue to grow. The Congressional Budget Office estimates that out-of-pocket costs for medicare cost sharing will be $505 per enrollee in 1984. The SMI premium, cost sharing, and deductible will account for 80 percent of the cost. In addition, it is estimated that the average beneficiary will pay an additional $550 in 1984 for noninstitutional care not covered by medicare, most notably prescription drugs and dental care. If nursing home care were included, it would add another $650 per person.[24]

The incidence of illness and the financial burden of paying cost sharing and other out-of-pocket costs for needed care is not related to ability to pay. Out-of-pocket health care expenditures, excluding nursing home care, represent 2 percent of total income in families with incomes in excess of $30,000 and 21 percent of income in families with incomes less than $5,000.[25] Cost sharing requirements by their very design means that those who are ill and use services bear the burden. The chronically ill and other high utilizers of care are most likely to incur large individual liability for medicare cost-sharing and uncovered services and charges.

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[20] Carolyne K. Davis, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[21] Alice Rivlin, testimony before Special Committee on Aging, U.S. Senate, hearing on the future of medicare, Apr. 13, 1983.

[22] HCFA, unpublished statistics, 1982.

[23] Eugene S. Callender, "Medicare: Analysis and Recommendations For Reform", New York State Office on Aging, September 1983.

[24] Congressional Budget Office, "Changing the Structure of Medicare Benefits: Issues and Options." Congress of the United States, (March 1983).

The distribution of out-of-pocket, medicare-program-related costs raises seriously equity issues for medicare. Should the sick elderly and disabled who rely on medicare-financed services be asked to assume an even greater financial burden through increased cost-sharing to ease the HI deficit? The poor and especially the near poor elderly already pay a greater share of their income for cost sharing and flat-rate taxes such as the SMI premium. Should the less advantaged be further disadvantaged by increased cost sharing and higher premiums?

III. Policy Proposal

Reform of medicare financing is long overdue. The current artificial distinction between the HI part of medicare and the SMI part of medicare does not contribute to sound fiscal or health policy. Awareness of the soaring increases in SMI expenditures is blocked by concern over projected deficits in the HI part of medicare. Rapidly rising expenditures in both parts of medicare affect the Federal budget and should be of equal concern. Further, there is no real reason why hospital benefits should automatically be made available to the elderly and disabled, but coverage of physicians' services should be optional. Both are essential to assuring access to needed health care services for the elderly and disabled.

Reform of medicare should retain its basic objectives. Medicare provides much needed financial protection and access to health care for some of our Nation's most vulnerable citizens. Given that medicare even now covers only 45 percent of the expenditures of the elderly, there would appear to be little room for increasing the share of health expenditures paid directly by medicare beneficiaries. Certainly, medicare should continue to pursue improvements in cost controls or incentives to health care providers to improve efficiency. But assuring that medicare can continue to provide financial protection to the elderly and disabled in the face of ever-rising health care costs and a growing elderly population will require reforming current methods of financing medicare to assure stable and adequate revenues to support the program.

Sources of revenues which might be tapped to provide additional income to medicare include:

Increases in the HI payroll tax on employers and employees;
Interfund borrowing from the OASDI trust funds;
General tax revenues, largely from the personal income tax and the corporate income tax;
Specific taxes, such as alcohol and cigarette or value-added taxes:
Premiums paid by medicare beneficiaries.

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[25] Congressal Budget Office, "Changing the Structure of Medicare Benefits: Issues and Options." Congress of the United States, (March 1983).

Each of these alternatives has advantages and disadvantages. The payroll tax is the current method of financing; past deficits have been met by raising the payroll tax rate. It is administratively straightforward and requires no major change in the program. However, the payroll tax is regressive; that is, it represents a higher fraction of total income for lower income individuals than higher income individuals, both because there is a limit on taxable earnings and because interest, dividend and rent income are not subject to the payroll tax. The share of the Federal budget financed by the payroll tax has risen markedly in recent years, and is widely considered to place an excessive financial burden on workers.

Interfund borrowing would use payroll taxes raised to support social security pensions to relieve pressure on the medicare HI trust fund. Under the 1983 social security financing plan, surpluses will be generated during the late 1980's and early 1990's. These funds could be borrowed to meet medicare deficits. However, this is a short term strategy. Surpluses under other trust funds will be required to meet pension payments in future years.

The medicare law could be modified to permit supplementation of HI payroll tax contributions with general tax revenues. Since general tax revenues come from moderately progressive personal income and corporate income taxes, this sources of financing would be more equitable than increases in the payroll tax. However, annual deficits of $100 to $200 billion in the Federal budget are projected for the immediate future. Channeling general tax revenues into medicare would increase the pressure to reduce other government expenditures and would not contribute to lessening the overall budgetary deficit.

The alternative of generating revenues from new taxes such as alcohol and cigarette taxes is the subject of another paper and not discussed here.

Proposal

Reform of medicare financing should guarantee the future solvency of medicare, provide greater flexibility to adapt to changes in the health care system or Federal budget, and promote sound health policy through a comprehensive, integrated set of benefits. To achieve these objectives, it is recommended that the HI and SMI be merged into a single medicare trust fund. Currently scheduled payroll tax contributions toward the HI trust fund would continue to flow to the new medicare trust fund. General revenues currently projected to pay for SMI expenditures would be added to the medicare trust fund. The current premium paid by the elderly for the SMI program, however, would be replaced by a premium for the entire medicare program. SMI coverage would no longer be optional. All medicare benefits would automatically be provided to medicare beneficaries currently covered under HI.

The new medicare premium, unlike the current SMI premium, would be related to income of medicare beneficiaries and administered through the personal income tax system. The premium would be set at a level sufficient to guarantee the financial solvency of medicare. It is assumed that every effort would be made to achieve economies in medicare through reasonable cost controls and incentives for health care providers to improve efficiency. It seems likely that even with such measures that the overall premium for the program would need to increase beyond that of the current SMI premium. However, the income-related feature would avoid undue financial hardship on the most vulnerable of the elderly and disabled.

Several questions should be raised about any proposal to reform the medicare program.

What is the likely impact of the proposal on the financial soundness of medicare?

What is the likely impact of the proposal on medicare beneficiaries, including the distributional impact by income and on vulnerable groups such the chronically ill?

Can the proposal be easily administered?

Impact on the financial soundness of medicare

The proposed reform of medicare financing would provide a more flexible approach to guaranteeing the financial soundness of medicare. The combination of revenues from the payroll tax, general revenues, and premiums should provide a stabler source of support. Further if future projections prove inaccurate—for example if the impact of cost containment measures have a greater or lesser impact on expenditures than predicted—premiums or the contribution from general revenues could be adjusted easily.

Necessary funds to eliminate the deficit could be generated by establishing the premium at the appropriate rate. Table 1 provides preliminary estimates of the impact on the projected deficit of a premium set to yield additional revenues of $10 billion in 1985—over and above the proceeds from the current SMI premium. This would require an average annual premium of $330 for medicare's 30 million beneficiaries. The proposal, however, would vary the premium with income. On average this would require a premium equal to approximately 4 percent of the income of medicare beneficiaries. Cost estimates by income are based on income tax file data on taxpaying members with a parson age 65 and over. For the elderly alone a premium set at 4.5 percent of adjusted gross income would yield $10 billion in 1985. Premium income from disabled medicare beneficiaries would reduce this percentage to approximately 4 percent. It is assumed that the proceeds of this fixed income-related premium would increase at an annual rate of 7 percent after 1985. This takes into account the 2 percent annual increases in the number of elderly as well as conservative estimates of growth in income per medicare beneficiary. In 1995, the premium set again at an average of 4 percent of income of medicare beneficiaries would yield almost $20 billion.

This premium would reduce the cumulative medicare deficit from $300 billion in 1995 to approximately $100 billion. (Note: Interest income on surpluses generated in the trust fund is not included in HI income; inclusion of interest income would reduce the deficit shown in table 1.)

TABLE 1.—PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND OUTLAYS, INCOME, AND BALANCES

[In billions of dollars]

Calendar year	Outlays	Premium income	Other HI income	Annual surplus	Year-end balance
1985	50.9	10.0	49.5	8.6	16.0
1986	57.1	10.7	56.4	10.0	26.0
1987	64.3	11.4	60.3	7.4	33.4
1988	72.3	12.2	63.9	3.8	37.2
1989	81.3	13.1	67.8	−0.4	36.8
1990	91.5	14.0	71.8	−5.7	31.1
1991	102.9	15.0	76.1	−11.8	19.3
1992	115.6	16.1	80.7	−18.8	0.5
1993	129.9	17.2	85.5	−27.2	−26.7
1994	146.0	18.4	90.7	−36.9	−63.6
1995	164.2	19.7	96.1	−48.4	−112.0

Sources; CBO estimates of outlays and other HI income. Author's estimates of premium income assumes 7 percent annual increase.

If medicare premiums are part of a medicare reform package that includes greater cost controls or incentives to health care providers to increase efficiency, the deficit would be eliminated. Table 2 indicates, for example, a combined strategy of holding prospective payment of hospitals to an annual rate of increase of hospital market basket inflation plus 1.6 percentage points and assessing a premium on average set at 4.5 percent of medicare beneficiary income. This combined strategy would be sufficient to eliminate the medicare deficit through 1995. (Note: Again the deficit shown in the table is overstated. The table will be revised when better information on interest income and outlays under tighter prospective payment can be obtained.)

Other cost containment measures might further reduce the need for premium income to the trust fund. For example, if savings were achieved through prospective payment of physicians, the savings in general revenues could be allocated to meeting rising hospital expenditures.

The premium need not be set at a constant rate over time. It could be set at a lower rate initially and gradually increased over time as necessary to assure the ongoing financial solvency of the program.

What should be understood, however, is that the estimated cumulative deficit of $300 billion is manageable. Part of the deficit comes from interest expenses on the cumulative deficit. Injection of additional revenues at an earlier stage or more effective cost containment measures can eliminate those interest expenses. Further, the $300 billion is accumulated over a 10-year period. Thus, the magnitude of the problem is $30 billion annually. It should also be noted that future projections are not adjusted for inflation. Growth in incomes and the economy will also take place over this time period, making any given expenditure easier to meet.

TABLE 2.—PROJECTIONS OF HOSPITAL INSURANCE TRUST FUND BALANCES ASSUMING TIGHTER PROSPECTIVE PAYMENT LIMITS

[In billions of dollars]

Calendar year	Outlays	Premium income	Other H1 income	Annual surplus	Yearend balance
1985	50.9	10.0	49.5	8.6	16.0
1986	56.2	10.7	56.4	10.9	26.9
1987	62.3	11.4	60.3	9.4	36.3
1988	69.0	12.2	63.9	7.1	43.4
1989	76.5	13.1	67.8	4.4	47.8
1990	84.7	14.0	71.8	1.1	48.9
1991	93.9	15.0	76.1	−2.8	46.1
1992	103.8	16.1	80.7	−7.0	39.1
1993	114.9	17.2	85.5	−12.2	26.9
1994	127.2	18.4	90.7	−18.1	8.8
1995	140.9	19.7	96.1	−25.1	−16.3

Sources: CBO estimates of outlays and other H1 income. Author's estimates of premium income assumes 7 percent annual increase.

Impact on beneficiaries

The impact of an income-related premium on different groups of elderly hinges on the specific manner in which the premium varies with income. Table 3 illustrates the distributional impact of four alternative income-related premiums. The table shows premium payments as a percent of adjusted gross income of taxpaying units with members aged 65 and over. In practice the premium would be charged to all medicare beneficiaries including the disabled. The table is useful, however, in illustrating the relative effect of different types of income-related premiums. All options shown would yield annual revenues of $10 billion in 1985. If paid only by families with elderly members, this would require an average premium equal to 4.5 percent (in practice the actual percentage required would be lower because of contributions by the disabled).

Option 1 is a fixed premium for all medicare beneficiaries with family incomes above $10,000. No premium would be assessed for those with incomes under $5,000. Premiums for beneficiaries with incomes between $5,000 and $10,000 would be on a sliding scale. Option 2 is a premium set at a constant percent of adjusted gross income. Option 3 is a premium set at a constant percent of taxable income. Option 4 is a premium set at a constant percent of tax liability, that is a tax surcharge.

The fixed premium would be regressive at incomes above $10,000, that is, it would represent a higher fraction of income for those elderly, say, with incomes between $10,000 and $15,000 than for those with incomes over $25,000. The premium set at a fixed percentage of adjusted gross income is by definition a proportional tax. All elderly would pay the same fraction of income to finance medicare. The tax on taxable income is moderately progressive. Virtually no premium would be charged elderly with incomes below

$5,000; but elderly with incomes above $10,000 would all pay approximately the same proportion of income toward the program. The tax surcharge is the most progressive method of financing. Under the tax surcharge, elderly with incomes below $5,000 would pay virtually no premium. Those with incomes between $5,000 and $10,000 would pay about 1 percent of income; those with incomes between $10,000 and $15,000 would pay 2 percent of income. By contrast those elderly with incomes above $25,000 would pay almost 6 percent of income.

TABLE 3.—DISTRIBUTIONAL IMPACT OF ALTERNATIVE INCOME-RELATED PREMIUMS,[1] 1985

[Increased revenue as a percent of adjusted gross income]

Adjusted gross income class	Option 1: Fixed-dollar premium reduced for poor	Option 2: Premium set at constant percentage of adjusted gross income	Option 3: Premium set at constant percentage of taxable income	Option 4: Premium set at constant percentage of tax liability
Total	4.5	4.5	4.5	4.5
$0 to $4,999	0.0	4.5	0.2	0.0
$5,000 to $9,999	8.4	4.5	2.6	0.9
$10,000 to $14,999	10.4	4.5	4.5	2.0
$15,000 to $19,999	7.4	4.5	4.5	2.6
$20,000 to $24,999	5.7	4.5	4.7	3.2
$25,000 and over	2.3	4.5	4.7	5.8

[1] Each option yields $10 billion revenues in 1985. Premium income is based on adjusted gross income of taxpaying units with members aged 65 and over.

Source: Calculated from Brookings Institution 1980 personal income tax file projected to 1985. Includes efforts of 1981 Tax Act [ERTA] and 1982 Tax Act [TEFRA], but not the 1983 social security financing plan.

All of the options for varying the premium with income are more equitably distributed than raising similar revenues from hospital coinsurance charges. Under the premium approach, all elderly (except low-income elderly if so desired) would share in the financial burden. Under the hospital coinsurance approach, only those 20 percent of the elderly who are hospitalized would contribute toward reduction of the deficit. Those chronically ill elderly could be faced with quite burdensome contributions under hospital coinsurance. Table 4 indicates that lower income elderly use more hospital care than higher income elderly. Approximately one-fifth of the elderly at all income levels are hospitalized during a year. Raising a comparable level of revenue ($10 billion) from hospital coinsurance would place enormous financial burdens on those low-income elderly who were hospitalized. Even if medicaid were to assure these amounts for the 3.5 million elderly covered under medicaid, serious financial burdens would be felt by those elderly with incomes just above medicaid eligibility. For example, the elderly with incomes between the poverty level and twice the poverty level would pay $2,314 per person hospitalized, or about 30 percent of income for those hospitalized. In addition such individuals would likely incur substantial nonhospital out-of-pocket expenditures.

Clearly, as a tax matter coinsurance is the most inequitable form of taxation that could be assessed on medicare beneficaries.

Premiums, which represent a fixed contribution to medicare, could be expected to encourage or discourage use of health care services. Thus, they would not pose a barrier to access to needed health care services. Hospital coinsurance, on the other hand, could be expected to reduce utilization particularly for those elderly with modest incomes who do not purchase supplementary private insurance. Very little is known about what types of hospital stays would be eliminated. There is a very real danger that burdensome hospital coinsurance charges would deter necessary care for many vulnerable elderly and quite obviously would place serious financial burdens on a chronically ill group of elderly.

TABLE 4.—DISTRIBUTIONAL IMPACT OF HOSPITAL COINSURANCE [1], 1977

Income class	Hospital coinsurance payments as a percent of income of hospitalized elderly
Total	22.5
Income below poverty level	70
Poverty to 2 times poverty level	30
2 to 4 times poverty level	15
Over 4 times poverty level	8

[1] Coinsurance set to yield $10 billion revenues. All numbers are preliminary and subject to revision.

Source: Calculated from 1977 National Survey of Medical Care Expenditures, National Center for Health Services Research, U.S. Department of Health and Human Services.

Administrative feasibility

Administering an income-related premium would represent a major departure from current administrative practice. Any systematic relationship of premiums to income would require administration through the personal income tax system. Even with this approach, however, certain administrative issues are raised. Low-income elderly who do not now file income tax statements would be required to do so under some variations. Decisions would be required about the definition of income subject to tax—social security pensions, tax-exempt-bond interest income, and so forth. The disabled receiving medicare would need to be identified. Required premiums for higher income younger households with a parent or grandparent living in the household would have to be determined. All of these issues require resolution, but do not represent insurmountable obstacles. Administration through the income tax system would assure fair and effective compliance without the demeaning administrative procedures that means-tested cost-sharing administered directly by medicare would entail.

IV. SUMMARY

Medicare is an extremely important program assuring many vulnerable Americans necessary protection from the financial hardship that major illness can bring. It is unthinkable that necessary measures will not be taken to assure the financial soundness of the program. Some relief may be possible by adoption of more effective cost controls or incentives for health care providers than have been instituted to date. Even with such measures, however, medicare expenditures are likely to continue to outstrip currently scheduled sources of revenues.

Relying on patient charges for health care services, such as hospital coinsurance, would concentrate payments on the chronically ill, many of whom have extremely modest incomes. Increases in payroll taxes or diversion of funds from general revenues are not promising at the present time given major increases in payroll taxes that have already occurred and unprecedented deficits in the Federal budget.

To assure the financial soundness of the program, it seems imperative that a fundamental reform of medicare's financing be undertaken. This reform should merge the HI and SMI portions of medicare, with a combined medicare trust fund financed by currently scheduled HI payroll taxes, general revenues currently projected to meet SMI expenditures, and a new medicare premium related to income of beneficiary. This reform would provide an incentive to develop integrated cost control mechanisms, such as capitation of providers, and promote better health policy. The flexibility of altering premiums or general revenue support depending upon requirements of the program, the effectiveness of cost containment measures, and budgetary considerations would be greatly enhanced by a merger of the two parts of medicare.

Reliance upon a premium which varies with income would assure that any financial contribution by medicare beneficiaries is equitably borne and does not place a financial burden on any medicare beneficiary. Unlike hospital coinsurance, it would not provide a barrier to the receipt of care and would not place heavy financial burdens on the chronically ill.

This conference is an excellent opportunity to explore possible alternatives for reforming medicare. It is hope that the suggestions and information contained here will be helpful in formulating a sound and equitable approach to dealing with present and future problems in medicare.

ALTERNATIVE MEDICARE FINANCING SOURCES

(*By* Stephen H. Long *and* Timothy M. Smeeding)*

I. The Medicare Problem and Plan of the Paper

> "Projections of outlays and income for the HI trust fund indicate serious financing problems later in this decade. Continued solvency of this program through 1995 will require either outlay reductions that are much larger than any program options currently under discussion, or very substantial increases in revenues." [1]

Medicare's Hospital Insurance (HI) Trust Fund is openly acknowleged to be in serious financial difficulty, while its Supplementary Medical Insurance (SMI) Trust Fund is quietly absorbing a growing flow of Federal general revenues. By 1990, HI revenues, based largely upon the payroll tax, will fall short of outlays by 25 percent. Deficits are projected to grow mightily with each passing year, amounting to 42 percent of outlays by 1995, for a cumulative HI trust fund deficit of $400 billion.[2] Subject to demographic, utilization, and health care cost forces similar to those underlying the HI trend, SMI outlays are also projected to rise more rapidly than most other economic aggregates (e.g., covered wages, on which the payroll tax is based; the Consumer Price Index, to which SMI premiums are indirectly indexed). However, the SMI trust fund is designed to receive Federal general revenue appropriations to cover the gap between premium income and outlays. Though this arrangement shields SMI from any publicly proclaimed crisis, its surging revenue demands are nonetheless worrisome. By 1987 transfers from the general fund for SMI are expected to reach $31.9 billion, almost triple their 1981 level of $11.3 billion.[3] In sum, there is a medicare financing problem that is of major proportions now and that promises to escalate well into the next century.

Numerous options are available for correcting the course toward increasing program deficits. Eligibility changes that would take the program the few remaining steps toward universal enrollment by the elderly offer short- to intermediate-run surpluses of revenues from newly covered workers in excess of incremental benefit payments. Benefit reductions, particularly through increased beneficiary cost sharing, would lower future outlays. Reimbursement reform, particularly through prospective payment of hospitals and various physician payment changes, promises to reduce both prices and service quantities paid by medicare. Finally, revising benefits to provide vouchers for private insurance coverage or enrollment in alternative delivery systems might be used to lower outlays, particularly if the resultant competition among insurers and providers results in lower costs for the same quality services. These options will be discussed in other papers prepared for this conference.

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[1] U.S. Senate, Special Committee on Aging, "Prospects for Medicare's Hospital Insurance Trust Fund," 98th Congress, 1st Session, March 1983, p. 1.

[2] U.S. Senate, "Prospects for Medicare's Hospital Insurance Trust Fund."

[3] U.S. Social Security Administration, Office of Research and Statistics, Social Security Bulletin, vol. 46 (July 1983), p. 69, Table M-8. Today 74 percent of SMI revenues come from general revenues, the remainder from enrollee premiums.

Despite the wide array of reforms available to lower projected medicare outlays, it seems clear that the long term trends imply a continuing need for revenue increases. This paper was commissioned to provide background on the principal alternative financing sources for medicare in the coming years. The next section describes the principal sources, carefully distinguishing among taxes placing burdens upon the population in general, and those that burden medicare beneficiaries in particular. The third section discusses the criteria employed in evaluating the alternatives. Then the separate revenue sources are analyzed, with particular attention to their implications for distributive equity.

II. The Financing Alternatives

There are two broad categories of taxation that can be used to support the medicare program: (1) taxes on the general population regardless of age or disability status, and (2) taxes on elderly and disabled beneficiaries.

Within the first category we examine the following revenue sources: payroll tax, general revenues, value-added tax, and selected excise taxes.

Within the second category, consisting of taxes on beneficiaries, the following are considered: premiums, personal income tax surcharge, tax on supplementary health insurance premiums, and liens on estates.

Throughout the discussion we abstract from whether a particular new source would be earmarked for the HI or SMI trust funds. This seems warranted since nearly all beneficiaries are enrolled in both parts and surely the Congress takes action on financing one fund with a clear awareness of the other.

One obvious source of medicare financing is an increase in the current HI revenue source, the payroll tax. Currently employers and employees pay 1.3 percent of covered earnings to the HI trust fund. The rate is scheduled to increase further, to 1.45 percent in 1986, and to remain at that level until 1995.[4] The burden of the payroll tax falls most heavily on younger workers. Thus, at any point in time, it represents an intergenerational transfer. If, however, workers view the HI payroll tax (or any other social insurance tax) as a downpayment on or contribution to their own future medical care needs, such contributions may also take the form of an intertemporal transfer. For current retirees, however, given the relative "newness" of medicare, there is little in the way of intertemporal transfer. At most, a person reaching age 65 in 1983 could have contributed about $4,000 (in 1983 dollars) over his working lifetime.[5] The present value of expected medicare benefits would be several times this amount.

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[4] U.S. Social Security Administration, Office of Research and Statistics, Social Security Bulletin, vol. 46 (June 1983).

A second financing source is increased general revenue financing. This option is hardly unprecedented, since SMI benefits are already predominantly financed by general revenues, and interest on the three OASDHI trust funds is paid from general revenues. Further, the 1983 Social Security Amendments included several new methods of subsidizing the OASI trust fund from general revenues. However, as noted earlier, SMI demands on general revenues are increasing at a rapid rate, so that placing still further demands on this financing source may be undesirable.

A third source, the value-added tax, was advocated strongly about 6 years ago by Representative Al Ullman, the head of the House Ways and Means Committee, and had been proposed from time to time in earlier years. This flat-rate national consumption tax was considered by some as a substitute for the corporate income tax and by others as a substitute for increased OASDHI payroll taxes. The latter rationale could be employed to justify a value-added tax for the HI trust fund. The value-added tax also can be supported on the general principle that consumption taxes have potentially beneficial effects on national savings. This is particularly true if the value-added tax is to be a substitute for the payroll or income tax.

The final type of tax on the general population to be considered is the excise tax on commodites that affect the general level of health. The commodities considered here are tobacco, alcoholic beverages, and gasoline. Taxes on such products can be viewed as current payments for the higher future medical care costs induced by their consumption.[6] The relationship between heavy smoking or alcoholism and health problems is well documented.[7] The adverse health effects of air pollution related to gasoline consumption is less well established, but clearly becoming more important.[8] If added consumption of gasoline, alcoholic beverages and tobacco (especially cigarettes) lead to respiratory disease, high blood pressure, cirrhosis, melanoma, and related health problems and if these health problems lead to higher HI outlays, a strong case for such taxation exists. Federal excise taxes on liquor remained constant in nominal terms from 1960 to 1980, during which time the real price of liquor fell by almost 50 percent.[9] Federal excise taxes on cigarettes recently doubled to 16 cents per pack. This increase is scheduled to expire in 1985, however, and the tax will return to 8 cents per pack.[10] Federal gasoline taxes recently were increased by 5 cents per gallon to fund Federal highway refurbishment. However, both the real and relative price of gasoline has fallen in recent years, even including the Federal tax increase.

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[5] U.S. Social Security Administration, Office of Research and Statistics, Annual Statistical Supplement, 1981 (1982).

[6] Christopher J. Zook and Francis D. Moore, "High Cost Users of Medical Care," New England Journal of Medicine, vol. 302 (May 1, 1980), pp. 996–1002.

[7] See, for example, the following: Victor R. Fuchs, Who Shall Live? (Basic Books, 1974); Philip J. Cook, "Alcohol Taxes as a Public Health Measure," British Journal of Addiction (1982), pp. 245–250; A. Klatzky, G. Friedman, and A.B. Sieglaub, "Alcohol and Mortality," Annals of Internal Medicine, vol. 95 (August 1981) pp. 139–145; and R. Weeden and A. Burchell, "Alcohol and Disease, Economic Aspects," Annals of Internal Medicine, vol 95 (August 1981), pp. 139–145.

[8] See, for example, the following: Erik P. Eckholm, The Picture of Health: Environmental Sources of Disease (W.W. Norton, 1977); and Allen V. Kneese and William D. Schulze, "Environment, Health and Economic—The Case of Cancer," American Economic Review, vol. 67 (February 1977), pp. 326–332.

[9] Philip J. Cook, "The Effect of Liquor Taxes on Drinking, Cirrhosis, and Auto Fatalities," in Richard Zeckhouser and Derek Leebaert, eds., What Role for Government (Duke University Press, 1983).

While the current burden of payroll taxes, general revenue finance, the value-added tax, or health taxes would primarily fall on the younger taxpaying public, several alternative forms of medicare finance can be directly levied on current, mainly elderly, beneficiaries. In 1965 when medicare was just beginning, the aged paid 70 percent of their health care bills as opposed to 37 percent today, the decrease due largely to the program. Proposals to finance the projected shortfall in the trust fund through increased beneficiary payments would reverse this shifting of the medical cost burden, turning it back toward the elderly.[11]

The first, and most direct, method of raising beneficiary payments is through a flat premium, analogous to uniform voluntary premiums paid for private insurance. Since premiums have fallen from 50 percent of SMI revenues at the program's inception to 22 percent in 1982, a case can be made for increased beneficiary payments in this form. Comparable to a direct premium would be a plan whereby a voucher is given to beneficiaries, but in a denomination below the actuarial value of current medicare program benefits. While resulting in different dollar flows through the trust funds, premiums and discounted vouchers can be made equivalent in their burdens on beneficiaries. Therefore, vouchers are not considered separately in this paper.

A second approach to beneficiary payments is an earmarked surcharge on the personal income tax payment of elderly (and disabled) enrollees. This is simply one example of a broader class of proposed beneficiary income taxes—sometimes cast as "income-related premiums," apparently to disguise their progressivity. While another paper being prepared for this conference will address such options in more detail, we explore the income tax surcharge as a polar case to contrast with the flat premium per enrollee.

Among the reform options generally classified as a benefit change is increased cost sharing. The initial impact of cost sharing is quite different from that of a premium—cost sharing is only charged for those who become ill and proceed to use medical services, while a premium is spread over all beneficiaries without regard to their actual utilization experience. Cost sharing is argued to be inequitable, particularly in the case of low income beneficiaries for whom out-of-pocket costs can be especially burdensome.

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[10] "Summary of Present Federal Excise Taxes," prepared by the Joint Committee on Taxation for the Committee on Ways and Means, House of Representatives, and the Committee on Finance, United States Senate (February 10, 1983).

[11] While the share of health care expenses paid by the elderly has decreased, the percentage of income spent by the elderly for health care is higher today than in 1965. Thus while the young pay a relatively larger share of the health care expenses of the elderly, this does not mean that health care expenses are a lesser burden on the elderly today than they were 20 years. See the following: Timothy M. Smeeding, Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty, U.S. Department of Commerce, Bureau of the Census, Technical Paper 50 (March 1982); Marilyn Moon, "Changing the Structure of Medicare Benefits: Issues and Options," Congress of the U.S., Congressional Budget Office (March 1983).

Yet, owing to the operation of the market in private supplementary insurance, the differences in the ultimate burdens of cost sharing and premiums are not nearly as great as they might appear at first glance. Supplementary insurance premiums paid to avoid increased cost sharing represent an off-budget counterpart to increased medicare premiums to support the existing benefit package. On the average, about two-thirds of the elderly have supplementary insurance coverage, the proportion varying from 44 percent in the lowest quintile of the elderly ranked by income (the poorest of whom have medicaid) to between 75 and 79 percent for the higher income half of the elderly.[12] Increased medicare cost sharing might induce additional purchases of supplementary insurance, further narrowing the apparent difference between cost sharing and premiums. Nonetheless, there is evidence that those who presently go without supplementary insurance are not only of lower income, but are more likely to be black and of advancing age.[13] These are compelling grounds for preferring premiums to increased cost sharing.

Unfortunately, in addition to paying those expenditures shifted off-budget through cost sharing, private supplementary health insurance increases the on-budget costs of medicare by inducing additional utilization.[14] A third source of beneficiary payment that might be used for incremental medicare financing is a tax on supplementary insurance premiums. At a minimum these revenues could be used to compensate the program for the effect of medigap insurance in vitiating medicare's cost sharing. Moreover, one preliminary estimate of the price elasticity of demand for supplementary insurance suggests that for a 10 percent increase in the price, the percent of elderly purchasing supplements will fall by 5 to 6 percent.[15] A sufficiently large tax on medigap premiums might, therefore, restore the cost-sharing feature of medicare for a larger share of beneficiaries.

A final revenue source that has just recently come to our attention is a lien program by which a portion of the decedent's estate is taxed to offset medicare benefits paid in excess of previous contributions to the program. It is well known that for many years after the start of a social insurance program expected benefits of retirees far exceed their actual working-year contributions. For married couples benefits can be as much as 12 times the value of contributions. An estate tax on the elderly who leave no surviving spouse (to cover excess medicare expenses of the predeceased spouse as well) could be earmarked for one or both of the trust funds. The burden of this tax falls upon the decedent and the heirs.

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[12] Author's tabulations of 1978 Health Interview Survey.

[13] Stephen H. Long, Russell F. Settle, and Charles R. Link, "Who Bears the Burden of Medicare Cost Sharing? Inquiry, vol. 19 (Fall 1982), pp. 222-234.

[14] Charles R. Link, Stephen H. Long, and Russell F. Settle, "Cost Sharing, Supplementary Insurance, and Health Services Utilization Among the Medicare Elderly," Health Care Financing Review, vol. 2 (Fall 1980), pp. 25-31.

[15] Stephen H. Long and Russell F. Settle, "Medicare Cost Sharing and Supplementary Health Insurance: Selected Research Findings," paper presented at American Public Health Association Meetings, Montreal, Canada, November 1982.

III. Evaluative Criteria

Four basic criteria will be used to evaluate the various financing methods described above. They are the following: distributive equity, efficiency and behavioral effects, revenue potential and stability, and administation and compliance costs.

The first criterion, distributive equity, will be examined from three perspectives. The first and overriding perspective in this analysis is intergenerational equity: Are the young nonbeneficiaries or the principally elderly beneficiaries to bear the greatest burden in closing the financing gap? As many have argued before, this issue of young versus old will continue to increase in importance for social policy decisions as our population ages.[16] A second perspective is that of vertical equity: Do the rich or the poor bear the larger burden relative to their income? If the relative burden increases with income, a tax is progressive; if the burden decreases with rising income, a tax is regressive; and if the burden is a constant percentage of income over all income groups, a tax is proportional. A final perspective on distributive equity is that of horizontal equity—are equals treated equally?

The second criterion, efficiency and behavioral effects, has to do with how imposition of a tax or charge (e.g., a medicare premium) can change behavior in an economically efficient or inefficient way. The national health insurance experiment has shown that higher direct consumer payments for health care through various cost-sharing arrangements reduce use of health care services, all else equal.[17] In the context of medicare, such reduced demand could reduce required outlays. Alternatively, a tax could induce avoidance and undercut its own revenue-producing potential. Different taxing strategies also can affect labor supply behavior, inflationary pressures, or savings among the elderly or nonelderly, all of which must be considered in the design of a tax or package of taxes. In the present analysis, measures which have the dual effect of increasing revenues and reducing excessive demand for health care services are particularly appealing.

The third criterion is revenue potential and stability. Some taxes may not have large enough bases to cover the medicare deficit alone and may be useful only in combination with other measures. Others, such as the payroll tax, may be particularly sensitive to the state of the economy. They may be useful only as part of a portfolio of taxes that balance cyclical impacts. For instance, at present each 1 percent increase in unemployment reduces HI payroll tax income by $1 billion.

The final criterion, administration and compliance costs, is critical to the practicality of various taxes or charges. An increase in an existing tax or a tax to be collected through an existing structure may have little or no marginal cost. A tax that requires a new or enlarged collection or enforcement structure may cost more than can be justified by its revenue potential.

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[16] See, for example, Robert H. Binstock, "Federal Policy Toward Aging," National Journal, vol. 10 (November 11, 1978), pp. 1838-1845: and Robert B. Hudson, "The Grazing of the Federal Budget and Its Consequences for Old Age Policy," Gerontologist, vol. 18 (October 1978), pp. 428-440.

[17] Joseph P. Newhouse, et al., "Some Interim Results from a Controlled Trial of Cost Sharing in Health Insurance," New England Journal of Medicine. vol. 305 (December 17, 1981), pp. 1501-1507.

IV. ANALYSIS OF REVENUE SOURCES

Distributive Equity

To illustrate the distribution of financing burdens from each source—particularly their intergenerational and vertical equity—we simulated $5 billion of incremental medicare payments in 1975. These simulation parameters were chosen for several reasons. First, the general tax simulator available to us was calibrated for the 1975 income year to employ the unusually rich data from the 1976 Survey of Income and Education.[18] Second, the most recent Consumer Expenditure Survey, upon which the consumption taxes were based, is for 1972–73, while the supplementary insurance tax is based upon data from the 1978 Health Interview Survey. Rather than age all of the microdata forward, with all the problematic demographic and economic assumptions that would involve, we proportioned future revenue needs back to 1975. Specifically, the 1995 HI trust fund deficit represents 42 percent of program outlays. The $5 billion chosen here is 43 percent of 1975 HI outlays, making the relative burdens equal. Moreover, the $5 billion figure is a round number, easily proportioned by an analyst to reflect any current or future revenue total desired. (Also note that $5 billion in 1975 is approximately equal to $10 billion in 1985 prices.)

Tables 1 through 3 summarize the principal findings for each financing source, excepting liens for which there is a separate table due to data incompatibilities. Each table displays results for seven revenue sources, first for all families and then separately for families headed by a nonelderly person and those headed by an elderly individual.

Separate calculations have been made for quintiles of the all-family income distribution, where "1" refers to the lowest 20 percent of the families. Table 1 measures the absolute dollar burden per family. Table 2 expresses this burden as a percent of family income—that is, as a tax rate on income from all sources—while table 3 displays an index number reflecting this burden relative to the average percent of income paid by all families (=100). Excise taxes on alcoholic beverages, cigarettes, and gasoline, discussed individually below, have been aggregated into a single tax column for purposes of tables 1 through 3. Data limitations prevented calculation of separate consumption tax burdens for elderly- and nonelderly-headed families.

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[18] These methods and data are described in Janet L. Johnson and Stephen H. Long, "General Revenue Financing of Medicare: Who Will Bear the Burden?" Health Care Financing Review, vol. 3 (March 1982), pp. 13-20.

TABLE 1.—DISTRIBUTION OF $5 BILLION INCREMENTAL FINANCING UNDER ALTERNATIVE REVENUE SOURCES: DOLLARS PER FAMILY BY AGE OF FAMILY HEAD AND FAMILY INCOME

Family income quintile	Taxes on wages, income, or consumption				Taxes on beneficiaries		
	Payroll tax	General revenues	Value-added tax	Selected excise taxes	Premiums	Personal income tax surcharge	Supplementary insurance tax
			ALL FAMILIES				
All	64	64	64	64	64	64	64
1	[illegible]	4	27	25	104	**0	86
2	27	18	43	48	99	11	107
3	62	41	60	64	51	37	56
4	96	72	78	83	34	64	38
5	130	186	109	101	33	208	34
			NONELDERLY-HEADED FAMILIES				
All	76	69			7	(*)	7
1	9	3			3	(*)	2
2	36	17			5	(*)	6
3	69	39			6	(*)	7
4	100	69			8	(*)	8
5	134	178			10	(*)	11
			ELDERLY-HEADED FAMILIES				
All	15	45			306	334	303
1	1	5			264	0	218
2	6	22			332	39	359
3	21	52			335	275	367
4	46	99			334	783	366
5	77	293			340	3039	358

*Due to data limitations, the surcharge was not applied to the small number of beneficiaries in nonelderly-headed families.

**Less than 0.50.

TABLE 2.—DISTRIBUTION OF $5 BILLION INCREMENTAL FINANCING UNDER ALTERNATIVE REVENUE SOURCES: BURDEN AS A PERCENT OF FAMILY INCOME BY AGE OF FAMILY HEAD AND FAMILY INCOME

Family income quintile	Taxes on wages, income, or consumption				Taxes on beneficiaries		
	Payroll tax	General revenues	Value-added tax	Selected excise taxes	Premiums	Personal income tax surcharge	Supplementary insurance tax
ALL FAMILIES							
All	0.48	0.48	0.48	0.48	0.48	0.48	0.48
1	.22	.15	1.00	.95	4.02	.01	3.33
2	.41	.27	.63	.67	1.49	.17	1.61
3	.56	.37	.52	.56	.46	.34	.50
4	.58	.43	.47	.50	.21	.39	.23
5	.44	.62	.37	.35	.11	.70	.12
NONELDERLY-HEADED FAMILIES							
All	.52	.47			.05	(*)	.05
1	.37	.13			.11	(*)	.09
2	.53	.25			.08	(*)	.09
3	.61	.35			.06	(*)	.06
4	.60	.41			.05	(*)	.05
5	.45	.60			.03	(*)	.04
ELDERLY-HEADED FAMILIES							
All	.18	.54			3.67	4.01	3.64
1	.03	.18			9.18	.01	7.60
2	.09	.34			5.14	.61	5.56
3	.20	.48			3.08	2.53	3.37
4	.28	.60			2.04	4.77	2.23
5	.24	.90			1.05	9.37	1.11

*Due to data limitations, the surcharge was not applied to the small number of beneficiaries in nonelderly-headed families.

**Less than 0.50.

TABLE 3.—DISTRIBUTION OF $5 BILLION INCREMENTAL FINANCING UNDER ALTERNATIVE REVENUE SOURCES: INDEX OF RELATIVE BURDEN AS A PERCENT OF FAMILY INCOME, BY AGE OF FAMILY HEAD AND FAMILY INCOME

Family income quintile	Taxes on wages, income, or consumption				Taxes on beneficiaries		
	Payroll tax	General revenues	Value added tax	Selected excise taxes	Premiums	Personal income tax surcharge	Supplementary insurance tax
ALL FAMILIES							
All	100	100	100	100	100	100	100
1	46	31	208	196	838	2	694
2	85	57	132	139	310	35	350
3	116	77	109	117	96	71	105
4	120	90	97	104	43	81	47
5	91	130	77	73	23	146	24
NONELDERLY-HEADED FAMILIES							
All	109	98	—	—	10	(*)	10
1	76	27	—	—	23	(*)	19
2	111	52	—	—	17	(*)	18
3	128	74	—	—	12	(*)	13
4	125	86	—	—	10	(*)	11
5	94	125	—	—	7	(*)	7
ELDERLY-HEADED FAMILIES							
All	37	113	—	—	763	100	759
1	7	37	—	—	1912	**0	1583
2	19	70	—	—	1071	15	1157
3	41	100	—	—	642	63	703
4	59	126	—	—	424	119	465
5	49	188	—	—	219	233	230

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*Due to data limitations, the surcharge was not applied to the small number of beneficiaries in nonelderly-headed families.

**Less than 0.50.

Table 1 shows that $5 billion of incremental medicare financing represents an average burden of $64 per family. The all-families section of the table reveals the contrast in vertical equity between general taxes on income and consumption, where absolute burdens rise with higher income, and premiums and premium taxes, where burdens fall as income rises. Among the general taxes, consumption levies take about five times as much revenue from the lowest income quintile as do income and payroll taxes, largely because the latter sources do not tax cash transfer income and because of personal exemptions and deductions in the personal income tax.

Comparing burdens for nonelderly and elderly-headed families provides insight into intergenerational equity issues. While the general taxes on wages and income apply to the wide group of income recipients, their burdens on the elderly are not insubstantial. This is particularly true of general revenues under which the elderly's property income (e.g., interest, dividends, taxable pensions) is taxed. In this case, the average burden on elderly-headed families in $45, or 70 percent of the average for all families. Payroll taxes impose a considerably smaller burden upon the elderly—only one-third that of general revenues—as a consequence of their limited dependence on earned income. The average nonelderly payroll tax burden is five times that of the elderly ($76 versus $13). In contrast to the findings on general taxes, the three beneficiary tax sources weigh almost exclusively on elderly-headed families. Particularly striking is the pattern of burdens under the beneficiary personal income tax surcharge. The variation about the mean burden of $334 becomes nearly confiscatory in the highest quintile. There the average payment of $3,039 is nearly 10 times the burden of a flat rate premium in the same quintile. The extreme progressivity of this source is not merely the result of a progressive rate structure, but also the result of the large amount of untaxed income in the lower quintile, while incremental income in the higher quintiles is largely taxable.

A common approach to evaluating vertical equity is to compare the percent of income taxed away, since family income from all sources is a measure of ability to pay. The $5 billion of incremental financing represents a tax of 0.48 percent (table 2) on the average family's income of about $13,300 in 1975. General revenues and the beneficiary personal income tax surcharge are clearly the most progressive sources, as indicated in table 3, where burdens in the top quintile are 130 and 146 percent, respectively, of the average for all families. The payroll tax also reflects progressivity in the lower quintile, where a greater proportion of income is from untaxed nonwage sources. Yet, moving from the fourth to the highest quintile, this tax becomes regressive as its burden falls from 120 to 91 percent of the mean (table 3), reflecting the effects of workers reaching the ceiling wage and receiving an increasing proportion of nonwage income. Displaying a common profile, the value-added tax and the selected excise taxes are clearly regressive, taxing 1 percent of income in the lowest income group and only about one-third as large a proportion of income in the highest quintile. Yet the greatest regressivity over all sources is displayed by the two premium taxes. The pattern shown by the flat premium is tempered slightly in the case of the supplementary insurance premium tax, where there is a smaller supplementation rate in the lowest income quintile. This is not to say that all revenue sources should necessarily redistribute income; a strong case can be made for premiums and for taxes on supplementary insurance using benefit grounds.

The distributive effects of three selected excise taxes on unhealthy commodities are compared in table 4. In each case, the absolute spending rises with income, but not rapidly enough to keep from falling as a percent of income. While all three are regressive financing mechanisms, cigarettes are clearly the most regressive with the lowest income group facing effective tax rates over two and one-half times as great as those of the average family. The gasoline tax is the second most regressive tax, followed by the liquor tax, which was least regressive. Any set of excise taxes violates the principle of horizontal equity to the extent that some families consume massive amounts of the taxed products as compared to others who consume none. Yet horizontal equity is a much less important evaluative criterion when the tax is aimed on efficiency grounds specifically at those who consume large quantities of the taxed product.

TABLE 4.—DISTRIBUTION OF $5 BILLION INCREMENTAL FINANCING UNDER SELECTED EXCISE TAXES ON UNHEALTHY COMMODITIES: BURDENS BY FAMILY INCOME, ALL FAMILIES

Family income quantile	Dollars per family			Percent of family income			Index of relative burden as a percent of family income		
	Alcoholic beverages [1]	Cigarettes [2]	Gasoline [3]	Alcoholic beverages	Cigarettes	Gasoline	Alcoholic beverages	Cigarettes	Gasoline
All	64	64	64	0.48	0.48	0.48	100	100	100
1	20	35	22	.72	1.29	.81	150	270	170
2	42	53	43	.61	.76	.63	127	159	132
3	59	67	66	.52	.59	.57	108	123	119
4	81	81	87	.49	.49	.52	102	102	109
5	117	93	103	.40	.28	.36	83	59	74

[1] Includes liquor, beer, and wine consumed at home, in restaurants and drinking establishments, and liquor consumed during recreation.
[2] Includes other tobacco products as well.
[3] Distributed according to gasoline consumption (or vehicle use), including recreation usage (73 percent); and according to total consumption (27 percent) for household gasoline usage.

Source: 1972–73 Survey of Consumer Expenditures (U.S. Bureau of Labor Statistics, 1978), adjusted to 1975 dollars for consistency with tables 1–3.

The last financing source considered is liens against the estates of the elderly whose lifetime medicare outlays exceeded the value of their lifetime medicare contribution. This would effectively turn into an estate tax on the surviving spouse at the time of his or her own death. Using data provided by the Social Security Administration, table 5 computes the distribution of lien burdens according to money income quintile, but of the elderly only. (Quintiles in tables 1 through 4 are based on income of all families.) As one would expect, the net worth of the elderly is both sizable and increases dramatically with income. The average dollar burdens per family, which are calculated as a constant percent of average net worth, are less interesting than the average dollar burden on taxed estates. Here we have assumed that 4 percent of the elderly families in each quintile experience the death of the surviving spouse in any given year. This raises the flat effective tax rate on taxed estates only to 21 percent. To the extent that surviving spouses have average estate values below those of the general population, the tax rate would have to be raised.

Table 6 summarizes the above findings on distributive equity for the major financing sources. The remaining portions of this section address the other evaluative criteria and also are summarized in table 6.

TABLE 5.—DISTRIBUTION OF $5 BILLION INCREMENTAL FINANCING UNDER LIENS ON ESTATES: BURDENS PER ESTATE AND PER FAMILY INCOME, ELDERLY FAMILIES ONLY

Family income quintile	Average net worth [1]	Average dollar burden per taxed estate [2]	Average dollar burden per family [3]
All	$58,768	$12,224	$334
1	23,028	4,790	132
2	55,125	11,466	314
3	83,471	17,362	477
4	93,316	19,410	530
5	173,132	36,011	988

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[1] Based upon 1979 data, adjusted to 1975 dollars for consistency with tables 1–3. Net worth includes all tangible wealth: homes, stocks, bonds, annuities, businesses, etc., but excludes pension wealth.

[2] Assumes that 4 percent of elderly families are terminated each year by death of the surviving spouse.

[3] Calculated as a constant percent of average net worth with no adjustment for estate transfer prior to death of the surviving spouse. The tax rate was calculated by dividing the $5 billion revenue requirement by aggregate net worth.

Source: 1979 Income Survey Development Panel, Office of Research, Statistics, and International Policy, Social Security Administration.

TABLE 6.—CRITERIA FOR EVALUATING REVENUE SOURCES

Financing source	Distributive equity			Efficiency/behavioral effects	Revenue potential and stability	Administration and compliance
	Intergenerational equity	Vertical equity	Horizontal equity			
Payroll tax	Burden falls on all workers—i.e., principally on the nonelderly.	Essentially proportional to wage income.	Some differences for families with non-wage income and for multiple-earner families.	Potential employment and inflation effects.	Large revenue base; cyclical with employment.	Collection system in place.
General revenues	Burden falls on wide income base, including property.	Progressive	Adjusts for family size	Potential effects on labor supply and savings.	......do	Do.
Value-added tax	Burden falls on all consumers..	Regressive	Makes no adjustment for family size.	Consumption taxes potentially encourage savings.	Large revenue base; stable relative to income.	Requires new collection and enforcement structure.
Selected excises	Burden falls on users of taxed commodities.	Regressive: for any level of use, poorer consumers pay relatively more.	Highly unequal burdens across families, rising with use of taxed commodities.	Taxes those who make high demands on the health system; adds incentives for black markets in taxed items.	Any one alone could only meet Medicare revenue needs with extremely large product price increases.	Collection system in place.
Premiums	Burden falls on elderly and disabled beneficiaries.	Regressive except at lowest income levels, where Medicaid pays the premium.	All beneficiaries are treated the same.	None. Cannot be shifted (avoided).	Large tax base	Do.
Income tax surcharge	......do	Highly progressive as the result of rate structure and increasing proportion of income taxable at higher income levels.	Different treatment based on income sources.	Disincentives to work and savings in upper income brackets.	......do	Straightforard if levied on currently taxable income; some additional costs if applied to a broader base.
Supplementary health insurance tax.	Burden falls on elderly and disabled who buy supplemental insurance.	Progressive to the extent that insurance purchases rise with income.	Burden varies according to amount of supplemental insurance bought.	Captures revenues to compensate program for health care demand induced by insurance that covers Medicare cost-sharing.	Reasonable levy may fall short of Medicare revenue needs.	Collection from insurers, possibly through contracts with state health insurance commissions.
Liens on estates	Burden falls on some elderly beneficiaries and their heirs.	Proportional to wealth	Burden falls equally on equally-sized estates.	May induce some inter-vivos transfers; captures more tax from those who place heavier demand on the health care system.	Large tax base	System in place for currently taxable estates; additional costs if other estates are included.

Efficiency and Behavioral Effects

In general, it can be expected that increases in general revenue financing or in payroll taxes would have potential impacts on employment, inflation, and savings. In particular, a payroll tax increase could be expected to affect the short-run demand for labor if the burden could not be shifted immediately backward to employees. Alternatively, the burden might be shifted forward to consumers in higher product prices, generating inflationary pressure. Increased general revenue financing potentially could serve as a disincentive to work and savings. Although the incremental demands placed on the payroll tax and on general revenues by medicare alone are not worrisome, they are only two of several sources of increasing pressure, the combined effect of which is cause for efficiency worries. Incremental impacts could be reduced if either financing method were used as part of a carefully designed portfolio of taxes. For example, there might be no net impact on savings if general revenue financing was combined with a value-added tax, which is assumed to have a stimulating effect on savings. It is important to note one final behavioral impact of a payroll tax increase and to a lesser extent general revenue financing. There has been a growing trend for employees to accept compensation in the form of noncash benefits. Increased taxes on cash wages could intensify this trend.[19] Such an effect would erode the base of either tax.

Potential behavioral impacts of excise taxes are more significant. Reliance on an alcoholic beverage tax alone to close the medicare financing gap would have raised the price of alcohol 23 percent in 1975. Similar sole use of cigarette or gasoline excises would have resulted in price increases of 28 to 44 percent, respectively. To the extent that such taxes reduce consumption, they could be expected to both reduce future health care demands by improving health and to increase future demands on medicare by increasing lifespan. However, even if consumption were to be reduced, health impacts would be realized only in the long run, perhaps not until the next century. More pertinent to the discussion at hand is the principle of benefit taxation. Such taxes place a larger burden on those whose behavior contributes to increased demands on the health care system. Moreover, the tax has a voluntary character: It can be escaped by a choice to forgo the taxed behavior. Tax induced price increases also would produce increased incentives for black market activities.

The efficiency and behavioral impacts of the measures that affect beneficiaries only are somewhat more varied. Premiums have no behavioral impact since they affect all beneficiaries identically and cannot be avoided. The income tax surcharge is another matter. Because of its highly progressive character, it could provide disincentives to work and savings—both of which generate taxable income—for elderly taxpayers in higher income brackets. Liens on estates may induce beneficiaries to reduce their taxable estates by transferring assests to their heirs. However, even though inter-vivos transfers currently carry substantial tax advantages, they have not been a significant tax problem.

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[19] Yung-Ping Chen, "The Growth of Fringe Benefits: Implications for Social Security," Monthly Labor Review, vol. 104 (November 1981), pp. 3–10.

From the benefit taxation perspective, both the supplementary health insurance tax and liens on estates have the advantage of taxing more heavily those who place higher demands on the health care system. To the extent that supplemental health insurance taxes reduce demand for such coverage, they also will expose a larger segment of the beneficiary population to medicare cost-sharing. This, in turn, could be expected to reduce utilization of health care services and thus medicare outlays. Of course, the cost of any such result in terms of the health status of beneficiaries is an important consideration. Any impact of liens on health care utilization rests on an assumption that the elderly would be willing to curb expenditures on health in order to leave a larger estate after taxes. To the extent that the assumption is valid, liens have the potential to reduce future medicare outlays.

Revenue Potential and Stability

In general it can be assumed that tax bases for payroll tax increases, general revenue financing, the value-added tax, medicare premiums, an income tax surcharge on recipients, and liens on estates are sufficiently large to handle revenue needs of the magnitude being discussed, either alone or certainly in combination with other revenue sources. However, the sensitivity of general revenues and payroll tax income to changes in employment suggest the desirability of using either as part of a balanced portfolio of taxes. The value-added tax has the advantage of being levied on consumption, which is stable relative to income.

By contrast, either selected excises or a supplementary health insurance tax might present problems as the sole method of closing the medicare financing gap. The use of any single excise to meet medicare needs would result in an extremely large product price increase. Any reasonable levy on supplementary health insurance purchases would be likely to fall short of revenue needs.

Administration and Compliance

The simplest and least costly financing methods with respect to administration and compliance are the payroll tax, general revenue financing, selected excises, and medicare premiums. Well-developed collection systems already are in place. However, if excises brought about greater black market activities, greater enforcement costs could be expected. Income tax surcharges for beneficiaries and liens on estates would have similar straightforward administration and low cost if levied only on beneficiaries who currently file income tax returns and estates that currently are taxable. If, however, the surcharge were to be applied to the broader category of all medicare beneficiaries, additional costs would be incurred to bring those who do not currently file into the system. Similarly, additional costs would be incurred to identify and tax estates not currently taxable. Coordination with State estate or death tax offices and probate courts is a possibility, but higher costs are inevitable given the sheer volume of formerly untaxed estates that would be brought into the system. Similar coordination with State health insurance commissions could simplify administration and reduce the cost of imposing a supplemental health insurance tax. Collection would be from insurers, possibly through contracts with State commissions. The most problematic and costly financing measure from the administration and compliance perspective is the value-added tax, which would require a new collection and enforcement structure.

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